



PROGRAMMABLE
POLYPHONIC
SYNTHESIZER

MODEL AX80

0092

SECTION 1 SERVICE MANUAL
SECTION 2 PARTS LIST
SECTION 3 SCHEMATIC DIAGRAM
SECTION 4 SERVICE BULLETIN

ABBREVIATIONS FOR THE SERVICE MANUAL MODEL A320

ABBREVIATIONS	EXPLANATION
CTL	Control
D/A	Digital to Analog Converter
DCO	Digital Controlled Oscillator
EO	Envelope Generator
FLD	FLuorescent Display
FREQ	FREQuency
HPF	High Pass Filter
INH	INHibit
INT	INTerrupt
KB-CV	Key Board Control Voltage
LFO	Low Frequency Oscillator
MAX	MAXimum
MEMO	MEMOry
MIDI	Musical Instrument Digital Interface
MIN	MINimum
MOD	MODulator
MP	Memory Protection
M.WHEEL	Modulation WHEEL
OSC	OSCillator
PARA	PARAMeter
PROM	PROGram
PWM	Pulse Width Modulation
RL	Return Line
ROM	Read Only Memory
S-H	Sample & Hold
SL	Scan Line
SW	SWitch
THRU	THRUgh
TRANS	TRANSistor
VA	Voltage Amplifier
VCA	Voltage Controlled Amplifier
VCF	Voltage Controlled Filter
VR	Variable Resistor
VO	VOLume

SAFETY INSTRUCTIONS

SAFETY CHECK AFTER SERVICING

Confirm the specified insulation resistance between power and plug prongs and externally exposed parts of the unit is greater than 10 Mohm, but for equipment with external antenna terminals (teaser, antenna, etc.) and is grounded for Δ or Δ , specified insulation resistance should be more than 2.2 Mohm (ground terminals, microphone jack, headphone jack, line-out jack, etc.).

PRECAUTIONS DURING SERVICING

1. Parts identified by the Δ symbol pertain critical for safety.
Replace only with parts number specified.
2. In addition to safety, other parts and assemblies are specified for compliance with such regulations as those applying to ignition insulation. These must also be replaced only with specified replacements.
Examples: RF conversion, tuner units, antenna selector switch, RF coil, noise blocking capacitor, noise blocking filter, etc.
3. Use specified material wiring. Note especially:
 - 1) Wire coated with PVC tubing
 - 2) Double insulated wire
 - 3) High voltage leads
4. Use specified insulating materials for insulating live parts. Note especially:
 - 1) Insulation Tape
 - 2) PVC tubing
 - 3) Spacers (Insulating Washers)
 - 4) Insulation sleeve for transformer
 - 5) Plastic screws for fixing anti-rust (especially in rustable)
5. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.), wrap ends of wires securely about the terminals before soldering.



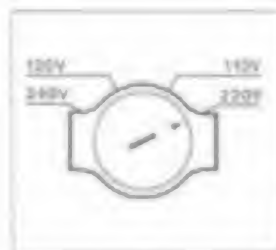
6. Observe that wires do not contact heat producing parts (transformers, coils, metal film resistors, fusible resistors, etc.).
7. Check that repaired wires do not contact sharp edged or pointed parts.
8. Also check areas surrounding repaired locations.
9. Use care that foreign objects (screws, solder droplets, etc.) do not remain inside the unit.

Voltage conversion

Model for Canada, USA, and Japan are not equipped with this facility. Each machine is preset in the factory according to its destination, but some machines can be set for 110V, 120V, 220V or 240V as required.

If your machine's voltage can be converted:

Before connecting the power cord, turn the VOLTAGE SELECTOR located on the bottom panel with a screwdriver until the correct voltage is indicated.



SECTION 1

SERVICE MANUAL

TABLE OF CONTENTS

I.	SPECIFICATIONS	4
II.	DISMANTLING METHOD	5
III.	CONTROLS AND UNIT CONNECTIONS	6
IV.	THE KEYBOARD RELATIONSHIP TO EQUALLY TEMPERED SCALE FREQUENCIES AND MUSICAL NOTATION	8
V.	PRINCIPAL PARTS LOCATION	8
VI.	AK40 II VERSIONS	9
VII.	ADJUSTMENT PROCEDURE FOR AXB VOICE PCB	11
	1. PREPARATION FOR THE ADJUSTMENT	11
	2. OFFSET ADJUSTMENT (ADJUSTMENT OF SAWTOOTH WAVE LEVEL ON OC0.2)	11
	3. ADJUSTMENT OF SAWTOOTH WAVE LEVEL	13
	4. RESONANCE FREQUENCY ADJUSTMENT	14
	5. LOADING A+B RANK DATA AND CONFIRMATION	14

0052

This Manual is FOR INTERNAL USE ONLY and must not be made available to unauthorized persons. No part of this manual may be reproduced in any form without permission from AKAI-ELECTRIC CO., LTD., Tokyo, Japan.

I. SPECIFICATIONS

Key	61 Key C scale
Voices	4 voices - 16 OSC, 4 Sub Osc
Key touch sense	VCA + VCF
Sample sounds	37 Sounds (Factory programmed)
Memory bank	A and B, each 12 sounds (User programmable)
OSC-1	1. FREQ RANGE (16 ¹ / ₂ A ²) 2. WAVE (OFF,  ,  ,  , MIX) 3. PW (DUTY 30% to 90%) 4. PWM speed (Rate - 0.1 to 200%) 5. SUB OSC (ON/OFF) 6. OSC - 1 Level
OSC-2	7. FREQ RANGE (18 ¹ / ₂ B ² , F ² , F ² , T ² , adjustment by 100 cents/min) 8. Detune (+, 3s cents) 9. WAVE (OFF,  ,  ,  , MIX) 10. CROSS MOD (OFF, 1, 2) 11. EG depth 12. EG source (VCF, VCA) 13. OSC-2 Level
VCF	14. Cut off freq (from 300Hz, steady state 200Hz) 15. Resonance 16. EG depth 17. Key follow (0 to 100%) 18. Key velocity 19. H.P.F.
LFO	20. 11, 17, Delay 21. 14, 18, Speed (0.1 to 200%) 22. 15, 19, Delay (0 to 5 sec) 23. 16, 20, WAVE ( ,  ,  ,  , ) 24. LFO select (OSC-1, OSC-2, VCF)
EG	25. 41 Attack 26. 42 Decay 27. 43 Sustain 28. 44 Release 29. 45 Key follow 30. EG source (VCA, VCA/VCF, VCF) Two independent EG systems enable the following range of settings to be achieved: VCA: 15 - 29 VCA, VCF: 21 - 29 VCF: 41 - 45 31. Key velocity 32. Level
Tone	± 50 cents
Wheel	Modulation (OSC, VCF) Pitch bend (± 200 cents in 120 cent steps)
MIDI	Key number, Key velocity, Pitch bend, Program change, Control change (Modulation wheel, sustain SW), Transmitt/Receive channel select
External jack	Audio out (L/R) (IV rms) (Stereo/mono), Headphone (Stereo), Summed output, Program-12 pedal, Tape memory (IN, OUT), MIDI jack (IN, OUT, THRU)
Dimensions	3 DTR (76) x 102 (40) x 192 (20) mm (40.1 x 4.0 x 7.54 inches)
Weight	11.5kg (25.4 lbs)

* For announcement purposes, specifications and design are subject to change without prior notice.

II. DISMANTLING METHOD

2-1. How to open the Front Cover



Fig. 2-1



Fig. 2-2

1) Remove side screws as Fig. 2-1.

2) Open the Front Cover as shown in Fig. 2-2.
(Be careful not to damage the wires holding the Front Cover while it is opened.)

2-2. How to dismantle the Keyboard Block and Head Panel Block. (Refer to Fig. 2-3)



Fig. 2-3

1) Remove the screws in group A (5 screws) for the Keyboard Block, and the screws in group B (4 screws) for the Head Panel Block (Refer to Fig. 2-3)

2) Then disconnect the connectors P1 on CPU PCB for the Keyboard Block and P1 & P2 for the Head Panel Block (Refer to Fig. 2-2)

III. CONTROLS AND UNIT CONNECTIONS

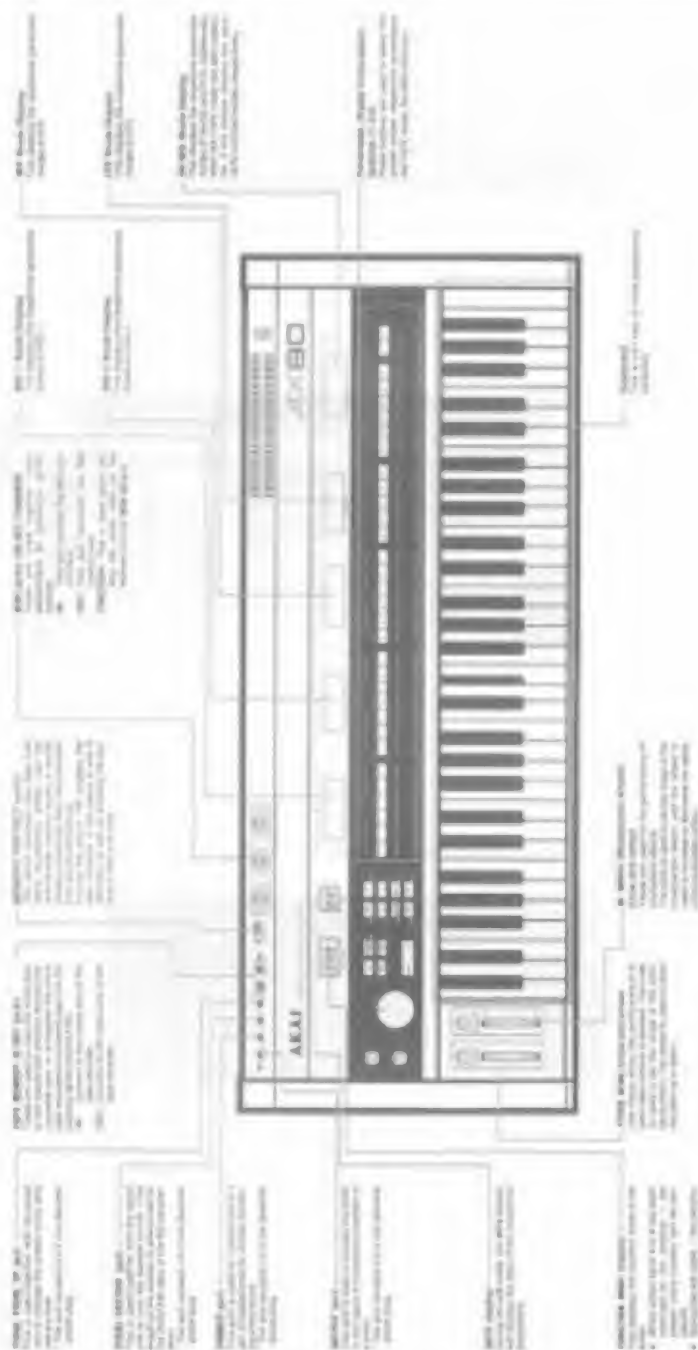


Fig. 3-1

IV. THE KEYBOARD REGATION-SHIP TO EQUALLY TEMPERED SCALE FREQUENCIES AND MUSI-CALNOTATION.

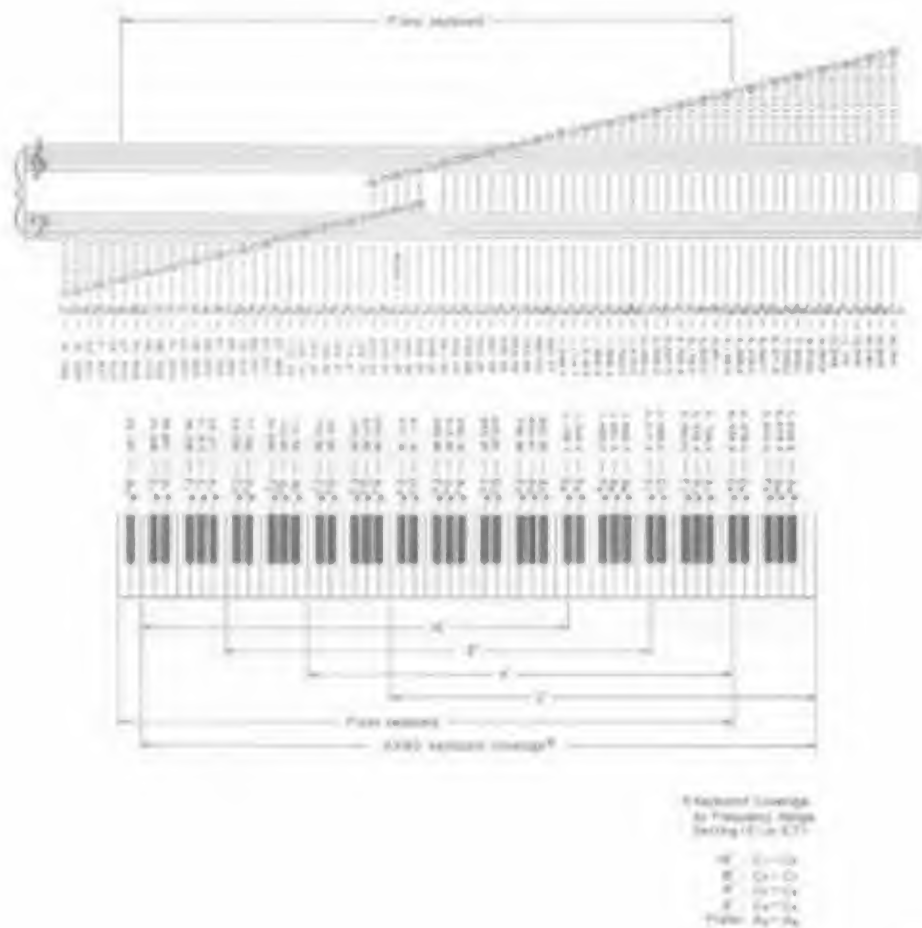


Fig. 41

V. PRINCIPAL PARTS LOCATION

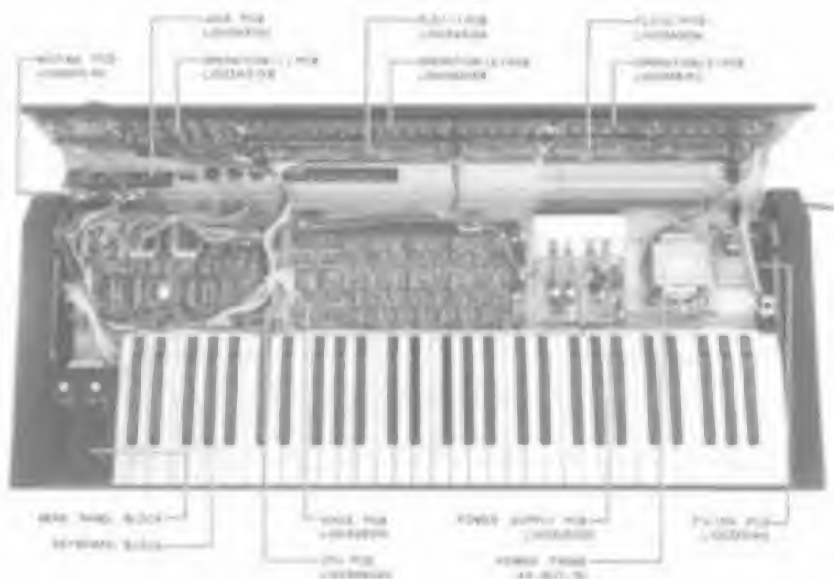


Fig. 2.10

VI. IC VERSIONS

- 1) There are three versions of ANOVA by using different types, for example and programs of SPSS.
- 2) These ANOVA combinations must be used for the system results.
- 3) These combinations.

Program Variables	Type	Lot Number
I	B	6425
J	B	6427
K	C	703A

- #### 4) How to Deal with the Differences.

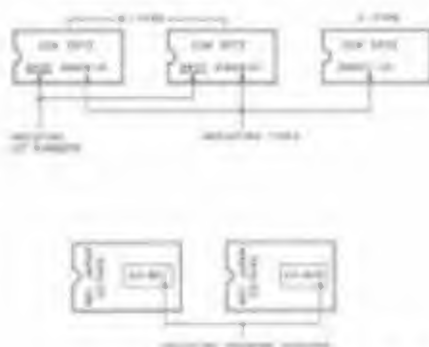


Fig. 4-3. —

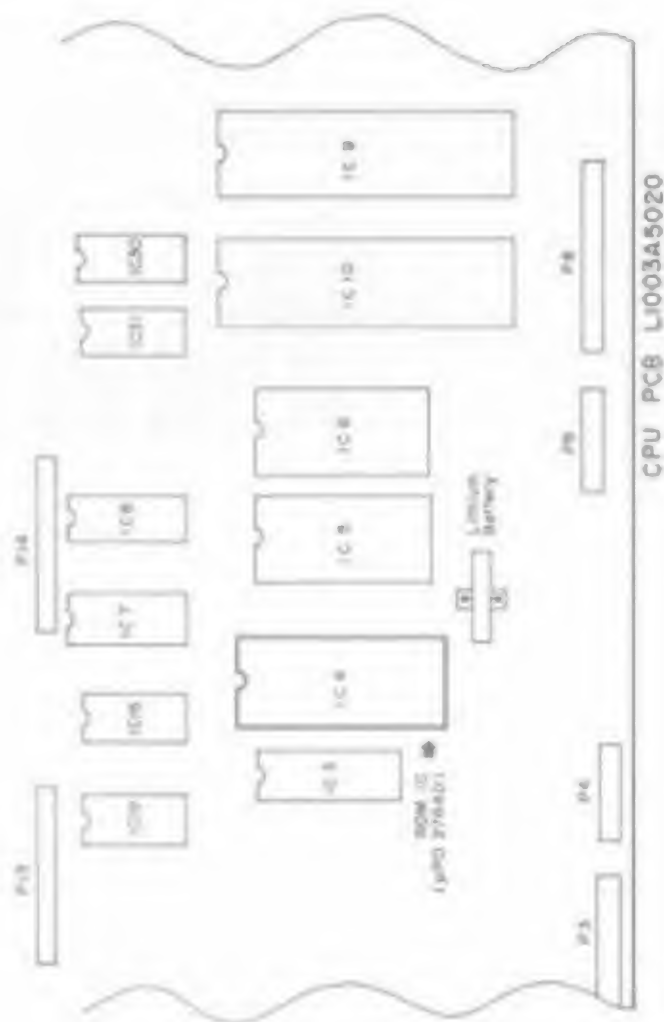


Fig. 4-2

VII. ADJUSTMENT PROCEDURE FOR VOICE PCB



Fig. 7-1

7-1. PREPARATION FOR THE ADJUSTMENT

- It is recommended to save A & B bank data onto a cassette tape, and verify A & B bank data.
- It is required to warm the unit up for 5 minutes before the adjustment of the resonance frequency for each voice.
- Make sure to load A & B bank data from the cassette tape after setup adjustment was completed.

7-2. OFFSET ADJUSTMENT (ADJUSTMENT OF SAWTOOTH WAVE LEVEL ON DCO-1)

- Turn on the unit, then the unit will be initialized in the FI (Factory) mode.
- Set the unit to Edit mode and set the parameter as follows.

Parameter Number	Parameter	Display Data
1	OSC-1 LEVEL	00
7	FREQ RANGE	15
8	DETUNE	20
9	WAVE	1
10	CROSS MOD	0
11	EG DEPTH	30
12	OSC-2 LEVEL	99
14	CUT OFF FREQ	99
15	RESONANCE	0
16	EG DEPTH	30
17	KEY FOLLOW	0
18	KEY VELOCITY	0
19	AMP	0
24	LFO SELECT	2
25	LFO	0
26	EG SELECT	1
27	ATTACK	0
28	DECAY	0
29	SUSTAIN	99
30	RELEASE	0
31	KEY VELOCITY	0
32	LEVEL	99

10) Set off the Memory Protect SW.

4) Turn the above phenomenon to one of Memory Bank (e.g. B1) and turn ON the Memory Protect SW.

5) Access any Memory Bank or Program. Do not touch any keys.

6) Select the Memory Bank again where the above parameters are used (e.g. B1).

7) Connect the oscilloscope probe to IC101 Pin 1.

8) Set the oscilloscope edge so that the waveform just is vertically clear.

9) Press one-time lower C key (C4) from the highest C key (C5) as the 1st key to press.

10) Check peak-to-peak voltage of the waveform.

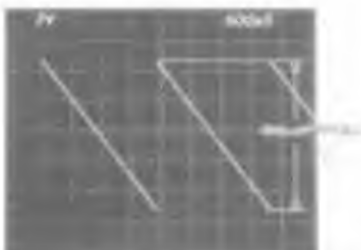


Fig. 7-2 Output waveform when CS is depressed.

11) Connect the oscilloscope probe to Pin 1 of the following ICs and read peak-to-peak voltage.

	*Key No.	IC No.
2nd key	B1	IC200
3rd key	B2	IC300
4th key	F1	IC400
5th key	G1	IC500
6th key	A1	IC600
7th key	B1	IC700
8th key	C1	IC800

* Key numbers are indicated at the [FREQ] RANGE at "1K" setting (see Fig. 6-3).



Fig. 7-3 Output waveform when C6 is depressed.

(2) Determine the average peak-to-peak voltage (i.e. 10Vp-p) from above readings.

(3) Connect the oscilloscope probe to IC101 Pin 1.

(4) Press the lowest C key (C1) and read peak-to-peak voltage, then change the connection to IC201 pin 1, press the next higher key (B1) and read Peak to Peak voltage in the same manner as the item 1) (4) above.

(5) Find the lowest Peak-to-peak voltage and adjust by turning VR1 to that so that this lowest peak-to-peak voltage in this particular voice will be the same as the average peak-to-peak voltage from the item 1).



Fig. 7-4 Output waveform of lowest Peak-to-Peak voltage

(6) If you can not go back to this voice number, simply switch to the other Memory Bank then back to the voice bank as the same 4 (e.g. B1).

(7) Press the lowest C key (C1) as the 1st key then next higher key until you get the voice you want.

(8) Adjust VR1 as same manner as the item 1).

7.3. ADJUSTMENT OF SAWTOOTH WAVE LEVEL

- 1) Turn the power off and on again.
Do not touch any keys on the keyboard.
- 2) Select the Memory Bank (e.g. B0) used for the previous adjustment.
- 3) Set the unit to Edit mode and set the parameters as follows:

Parameter Name	Function	Display Data
1	FREQ RANGE	18
2	WAVE	3
3	PW	0
4	PWM	0
5	SLIP OSC	0
6	OSC-1 LEVEL	99
13	OSC-2 LEVEL	0
24	LFO SELECT	1
30	LFO	0

- 4) Connect the oscilloscope probe to the Test Point CH01P and TP-16 (OSC).
- 5) Press the key from C1 to C2 one by one and adjust by turning VR02 to VR09 the required Vmax levels to the table below so that the duty cycle of the square waveform is 50%.

VOICE No.	VR No.	*Key No.
1	102	C1 (lowest)
2	202	D1
3	302	E1
4	402	F1
5	502	G1
6	602	A1
7	702	B1
8	802	C2

* Key numbers are indicated as the FREQ RANGE at "16" setting (See Fig. 4-1)

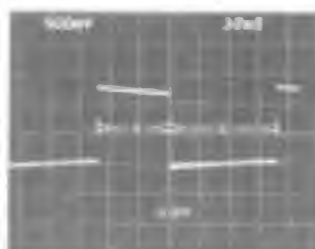


Fig. 7-5 (a)



Fig. 7-5 (b)

Figure 7-5 (a)

5.4. RESONANCE FREQUENCY ADJUSTMENT

Please refer to the item 5-1 prior to this adjustment.

- ① Turn the power off and on again to initialize the unit in the P1 mode. Do not touch any keys on the keyboard.
- ② Then set the unit to Edit mode and set the parameters as follows.

Parameter Number	Parameter	Display Data
8	OSC-1 LEVEL	0
13	OSC-2 LEVEL	0
14	CUT OFF FREQ	50
15	RESONANCE	49
16	EQ DEPTH	50
17	KEY FOLLOW	0
18	KEY VELOCITY	0
19	HPF	0
20	ATTACK	0
20	DECAY	0
27	SUSTAIN	60
28	RELEASE	0
29	KEY FOLLOW	0
31	KEY VELOCITY	0
32	LEVEL	55

- ③ Connect the tuner (e.g. KORG MODEL AT-07) to the output jack with a connection cable for Connect the frequency analyzer to TP-9 (MIDI) and TP-10 (GND).
- ④ Press the lowest key (C2) and adjust by raising VIBRO the Voice 1 to get the reading of A1 on the tuner (for the frequency counter, reading will be 231Hz).
- ⑤ Adjust the other voices in the same manner. Refer to the table below.

*Key No.	VR No.	Reading	Voice No.
D2	201	A1 on at 231Hz	2
E2	301	A1 on at 231Hz	3
F2	401	A1 on at 231Hz	4
G2	501	A1 on at 231Hz	5
A2	601	A1 on at 231Hz	6
B2	701	A1 on at 231Hz	7
C3	801	A1 on at 231Hz	8

* Key numbers are indicated as the FREQ RANGE "C" setting (see Fig. 4-1).

- ⑥ Go back to the D1 Voice (Press the lowest Key C2 to check shift of the frequency and readjust if necessary, then check next VOICE No. up to the Voice No.8 in the same manner as the step 5.

5.5. LOADING A & B BANK DATA AND CONFIRMATION

- ① Turn off the Memory protect SW.
- ② Load and verify A & B bank data.
- ③ Turn on the Memory Protect SW.
- ④ Press all the keys of the keyboard one by one to make sure all the keys are functioning with one of the Program Sound (e.g. P1).
- ⑤ Press one of the key of the keyboard and check all the Program, A and B Bank Sounds (i.e. P1, P2, A1-A12 and B1-B12) to make sure there will be proper matching output.

VIII. PC BOARD TITLES & IDENTIFICATION NUMBERS

PC Board Title	PC Board Number
VOICE PC BOARD	11003A0010
CPU PC BOARD	11003A5020
FLD(1) PC BOARD	11003A312A
OPERATION(2) PC BOARD	11003A312B
IACB PC BOARD	11003A312C
FLD(3) PC BOARD	11003A313A
OPERATION(4) PC BOARD	11003A313B
OPERATION(5) PC BOARD	11003A313C
POWER SUPPLY PC BOARD	11003C3040
FILTER PC BOARD	11003D7140
MUTING PC BOARD	11003D7140

A BANK SOUND DATA

Page 1 of Page 1

Page 1 of Page 1

Time	Bank	Sound	Data
1	1	1	1
2	1	1	1
3	1	1	1
4	1	1	1
5	1	1	1
6	1	1	1
7	1	1	1
8	1	1	1
9	1	1	1
10	1	1	1
11	1	1	1
12	1	1	1
13	1	1	1
14	1	1	1
15	1	1	1
16	1	1	1
17	1	1	1
18	1	1	1
19	1	1	1
20	1	1	1
21	1	1	1
22	1	1	1
23	1	1	1
24	1	1	1
25	1	1	1
26	1	1	1
27	1	1	1
28	1	1	1
29	1	1	1
30	1	1	1
31	1	1	1
32	1	1	1
33	1	1	1
34	1	1	1
35	1	1	1
36	1	1	1
37	1	1	1
38	1	1	1
39	1	1	1
40	1	1	1
41	1	1	1
42	1	1	1
43	1	1	1
44	1	1	1
45	1	1	1
46	1	1	1
47	1	1	1
48	1	1	1
49	1	1	1
50	1	1	1
51	1	1	1
52	1	1	1
53	1	1	1
54	1	1	1
55	1	1	1
56	1	1	1
57	1	1	1
58	1	1	1
59	1	1	1
60	1	1	1
61	1	1	1
62	1	1	1
63	1	1	1
64	1	1	1
65	1	1	1
66	1	1	1
67	1	1	1
68	1	1	1
69	1	1	1
70	1	1	1
71	1	1	1
72	1	1	1
73	1	1	1
74	1	1	1
75	1	1	1
76	1	1	1
77	1	1	1
78	1	1	1
79	1	1	1
80	1	1	1
81	1	1	1
82	1	1	1
83	1	1	1
84	1	1	1
85	1	1	1
86	1	1	1
87	1	1	1
88	1	1	1
89	1	1	1
90	1	1	1
91	1	1	1
92	1	1	1
93	1	1	1
94	1	1	1
95	1	1	1
96	1	1	1
97	1	1	1
98	1	1	1
99	1	1	1
100	1	1	1

Bank Sound Data, 100 Banks, 100 Sounds, 100 Data

SECTION 2

PARTS LIST

TABLE OF CONTENTS

RECOMMENDED SPARE PARTS	21
1. PC BOARD BLOCK	22
2. VORX PC BOARD	22
3. UPS PC BOARD	22
4. FLO (I) PC BOARD	23
5. FLO (O) PC BOARD	23
6. OPERATION (I) PC BOARD	23
7. OPERATION (O) PC BOARD	23
8. OPERATION (CS) PC BOARD	23
9. ASCE PC BOARD	23
10. POWER SUPPLY PC BOARD	24
11. FILTER PC BOARD	24
12. MUTING PC BOARD	24
13. PANEL BIND BLOCK	25
14. ASSEMBLY BLOCK	27
15. FINAL ASSEMBLY BLOCK	27
INDEX	28

This Manual is FOR EXTERNAL USE ONLY and must not be made available to unauthorized personnel. No part of this manual may be reproduced in any form without permission from SAE ELECTRIC CO., LTD., Tokyo, Japan.

ATTENTION

- When placing an order for parts, be sure to list the part no., model no., and description of each part. If any of this information is omitted, there are instances in which parts cannot be shipped as the wrong parts will be delivered.
- Please be careful not to make a mistake in the part no. If the part no. is in error, a part different from the one ordered may be delivered.
- Because part numbers and part definitions and supply in the Preliminary Parts List may have been the subject of change, please use this parts list for all future reference.

HOW TO USE THIS PARTS LIST

- This Parts List shows those parts which are considered necessary for repair. Other parts, such as resistors and capacitors, are shown in the "Component List for Service Parts" from which these parts should be ordered and parts.
- The Recommended Spare Parts List shows those parts in the Parts List which are considered particularly important for service.
- Parts not shown in the Parts List and "Component List for Service Parts" will not in principle be supplied.

A. How to read the parts list

1) Mainboard Block

5) P.C. Board Block

2. HEAD BASE BLOCK

6. SYS. CON. P.C. BOARD BLOCK

REF. NO.	PART NO.	DESCRIPTION
1-1	09-010101000	HEAD BASE, INDUCTOR, 0.1H
1-2	09-010101000	HEAD SUP. TRANSISTOR
1-3	21-0101010	PARTIAL-CONTROL UNIT
1-4	21-0101010	RELAY-CONTROL UNIT
1-5	21-0101010	ITS ANGLE ADJUST. SWITCH

SP (Service Parts) Classification

A small "s" indicates the symbol to show that particular part in the Photo-illustration.

This number corresponds with the numerical part index number in the Spare

This number corresponds with the Figure Number

REF. NO.	PART NO.	DESCRIPTION
6-1	01-010101000	PC SYS. CON. BOARD, 0.1H
6-2	01-0101010	PC SYS. CON. BOARD
6-3	01-0101010	PC SYS. CON. BOARD
6-4	01-0101010	PC SYS. CON. BOARD
6-5	01-0101010	PC SYS. CON. BOARD
6-6	01-0101010	PC SYS. CON. BOARD
6-7	01-0101010	PC SYS. CON. BOARD
6-8	01-0101010	PC SYS. CON. BOARD
6-9	01-0101010	PC SYS. CON. BOARD
6-10	01-0101010	PC SYS. CON. BOARD
6-11	01-0101010	PC SYS. CON. BOARD
6-12	01-0101010	PC SYS. CON. BOARD
6-13	01-0101010	PC SYS. CON. BOARD
6-14	01-0101010	PC SYS. CON. BOARD
6-15	01-0101010	PC SYS. CON. BOARD
6-16	01-0101010	PC SYS. CON. BOARD
6-17	01-0101010	PC SYS. CON. BOARD
6-18	01-0101010	PC SYS. CON. BOARD
6-19	01-0101010	PC SYS. CON. BOARD
6-20	01-0101010	PC SYS. CON. BOARD
6-21	01-0101010	PC SYS. CON. BOARD
6-22	01-0101010	PC SYS. CON. BOARD
6-23	01-0101010	PC SYS. CON. BOARD
6-24	01-0101010	PC SYS. CON. BOARD
6-25	01-0101010	PC SYS. CON. BOARD
6-26	01-0101010	PC SYS. CON. BOARD
6-27	01-0101010	PC SYS. CON. BOARD
6-28	01-0101010	PC SYS. CON. BOARD
6-29	01-0101010	PC SYS. CON. BOARD
6-30	01-0101010	PC SYS. CON. BOARD
6-31	01-0101010	PC SYS. CON. BOARD
6-32	01-0101010	PC SYS. CON. BOARD
6-33	01-0101010	PC SYS. CON. BOARD
6-34	01-0101010	PC SYS. CON. BOARD
6-35	01-0101010	PC SYS. CON. BOARD
6-36	01-0101010	PC SYS. CON. BOARD
6-37	01-0101010	PC SYS. CON. BOARD
6-38	01-0101010	PC SYS. CON. BOARD
6-39	01-0101010	PC SYS. CON. BOARD
6-40	01-0101010	PC SYS. CON. BOARD
6-41	01-0101010	PC SYS. CON. BOARD
6-42	01-0101010	PC SYS. CON. BOARD
6-43	01-0101010	PC SYS. CON. BOARD
6-44	01-0101010	PC SYS. CON. BOARD
6-45	01-0101010	PC SYS. CON. BOARD
6-46	01-0101010	PC SYS. CON. BOARD
6-47	01-0101010	PC SYS. CON. BOARD
6-48	01-0101010	PC SYS. CON. BOARD
6-49	01-0101010	PC SYS. CON. BOARD
6-50	01-0101010	PC SYS. CON. BOARD
6-51	01-0101010	PC SYS. CON. BOARD
6-52	01-0101010	PC SYS. CON. BOARD
6-53	01-0101010	PC SYS. CON. BOARD
6-54	01-0101010	PC SYS. CON. BOARD
6-55	01-0101010	PC SYS. CON. BOARD
6-56	01-0101010	PC SYS. CON. BOARD
6-57	01-0101010	PC SYS. CON. BOARD
6-58	01-0101010	PC SYS. CON. BOARD
6-59	01-0101010	PC SYS. CON. BOARD
6-60	01-0101010	PC SYS. CON. BOARD
6-61	01-0101010	PC SYS. CON. BOARD
6-62	01-0101010	PC SYS. CON. BOARD
6-63	01-0101010	PC SYS. CON. BOARD
6-64	01-0101010	PC SYS. CON. BOARD
6-65	01-0101010	PC SYS. CON. BOARD
6-66	01-0101010	PC SYS. CON. BOARD
6-67	01-0101010	PC SYS. CON. BOARD
6-68	01-0101010	PC SYS. CON. BOARD
6-69	01-0101010	PC SYS. CON. BOARD
6-70	01-0101010	PC SYS. CON. BOARD
6-71	01-0101010	PC SYS. CON. BOARD
6-72	01-0101010	PC SYS. CON. BOARD
6-73	01-0101010	PC SYS. CON. BOARD
6-74	01-0101010	PC SYS. CON. BOARD
6-75	01-0101010	PC SYS. CON. BOARD
6-76	01-0101010	PC SYS. CON. BOARD
6-77	01-0101010	PC SYS. CON. BOARD
6-78	01-0101010	PC SYS. CON. BOARD
6-79	01-0101010	PC SYS. CON. BOARD
6-80	01-0101010	PC SYS. CON. BOARD
6-81	01-0101010	PC SYS. CON. BOARD
6-82	01-0101010	PC SYS. CON. BOARD
6-83	01-0101010	PC SYS. CON. BOARD
6-84	01-0101010	PC SYS. CON. BOARD
6-85	01-0101010	PC SYS. CON. BOARD
6-86	01-0101010	PC SYS. CON. BOARD
6-87	01-0101010	PC SYS. CON. BOARD
6-88	01-0101010	PC SYS. CON. BOARD
6-89	01-0101010	PC SYS. CON. BOARD
6-90	01-0101010	PC SYS. CON. BOARD
6-91	01-0101010	PC SYS. CON. BOARD
6-92	01-0101010	PC SYS. CON. BOARD
6-93	01-0101010	PC SYS. CON. BOARD
6-94	01-0101010	PC SYS. CON. BOARD
6-95	01-0101010	PC SYS. CON. BOARD
6-96	01-0101010	PC SYS. CON. BOARD
6-97	01-0101010	PC SYS. CON. BOARD
6-98	01-0101010	PC SYS. CON. BOARD
6-99	01-0101010	PC SYS. CON. BOARD
6-100	01-0101010	PC SYS. CON. BOARD

SP (Service Parts) Classification

These reference symbols correspond with component symbols in the Schematic Diagrams.

- The kind of part and its installation position can both be determined by the Part Number. To determine where a part number is listed, either the Part Index at the end of the Parts List. It is necessary first of all to find the Part Number. This can be accomplished by using the Reference Number listed at the right of the part number in the Part Index.

WARNING

⚠ INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS.

AVERTISSEMENT

⚠ R. INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT.

RECOMMENDED SPARE PARTS LIST

Believe it or not, if the parts listed below are not on hand, almost any repair can be accomplished. We suggest that you stock these Recommended Spare Parts items.

REF ID	PART NO	DESCRIPTION	UNIT
1	70-154247	5.75 INCH POWER AS-40 T-1025	
2	70-154248	5.75 INCH POWER AS-40 T-1025, A2	
3	70-154249	5.75 INCH POWER AS-40 T-1025, A3	
4	70-154250	5.75 INCH POWER AS-40 T-1025, A4	
5	70-154251	5.75 INCH POWER AS-40 T-1025, A5	
6	70-154252	5.75 INCH POWER AS-40 T-1025, A6	
7	70-154253	5.75 INCH POWER AS-40 T-1025, A7	
8	70-154254	5.75 INCH POWER AS-40 T-1025, A8	
9	70-154255	5.75 INCH POWER AS-40 T-1025, A9	
10	70-154256	5.75 INCH POWER AS-40 T-1025, A10	
11	70-154257	5.75 INCH POWER AS-40 T-1025, A11	
12	70-154258	5.75 INCH POWER AS-40 T-1025, A12	
13	70-154259	5.75 INCH POWER AS-40 T-1025, A13	
14	70-154260	5.75 INCH POWER AS-40 T-1025, A14	
15	70-154261	5.75 INCH POWER AS-40 T-1025, A15	
16	70-154262	5.75 INCH POWER AS-40 T-1025, A16	
17	70-154263	5.75 INCH POWER AS-40 T-1025, A17	
18	70-154264	5.75 INCH POWER AS-40 T-1025, A18	
19	70-154265	5.75 INCH POWER AS-40 T-1025, A19	
20	70-154266	5.75 INCH POWER AS-40 T-1025, A20	
21	70-154267	5.75 INCH POWER AS-40 T-1025, A21	
22	70-154268	5.75 INCH POWER AS-40 T-1025, A22	
23	70-154269	5.75 INCH POWER AS-40 T-1025, A23	
24	70-154270	5.75 INCH POWER AS-40 T-1025, A24	
25	70-154271	5.75 INCH POWER AS-40 T-1025, A25	
26	70-154272	5.75 INCH POWER AS-40 T-1025, A26	
27	70-154273	5.75 INCH POWER AS-40 T-1025, A27	
28	70-154274	5.75 INCH POWER AS-40 T-1025, A28	
29	70-154275	5.75 INCH POWER AS-40 T-1025, A29	
30	70-154276	5.75 INCH POWER AS-40 T-1025, A30	
31	70-154277	5.75 INCH POWER AS-40 T-1025, A31	
32	70-154278	5.75 INCH POWER AS-40 T-1025, A32	
33	70-154279	5.75 INCH POWER AS-40 T-1025, A33	
34	70-154280	5.75 INCH POWER AS-40 T-1025, A34	
35	70-154281	5.75 INCH POWER AS-40 T-1025, A35	
36	70-154282	5.75 INCH POWER AS-40 T-1025, A36	
37	70-154283	5.75 INCH POWER AS-40 T-1025, A37	
38	70-154284	5.75 INCH POWER AS-40 T-1025, A38	
39	70-154285	5.75 INCH POWER AS-40 T-1025, A39	
40	70-154286	5.75 INCH POWER AS-40 T-1025, A40	
41	70-154287	5.75 INCH POWER AS-40 T-1025, A41	
42	70-154288	5.75 INCH POWER AS-40 T-1025, A42	
43	70-154289	5.75 INCH POWER AS-40 T-1025, A43	
44	70-154290	5.75 INCH POWER AS-40 T-1025, A44	
45	70-154291	5.75 INCH POWER AS-40 T-1025, A45	
46	70-154292	5.75 INCH POWER AS-40 T-1025, A46	
47	70-154293	5.75 INCH POWER AS-40 T-1025, A47	
48	70-154294	5.75 INCH POWER AS-40 T-1025, A48	
49	70-154295	5.75 INCH POWER AS-40 T-1025, A49	
50	70-154296	5.75 INCH POWER AS-40 T-1025, A50	
51	70-154297	5.75 INCH POWER AS-40 T-1025, A51	
52	70-154298	5.75 INCH POWER AS-40 T-1025, A52	
53	70-154299	5.75 INCH POWER AS-40 T-1025, A53	
54	70-154300	5.75 INCH POWER AS-40 T-1025, A54	
55	70-154301	5.75 INCH POWER AS-40 T-1025, A55	
56	70-154302	5.75 INCH POWER AS-40 T-1025, A56	
57	70-154303	5.75 INCH POWER AS-40 T-1025, A57	
58	70-154304	5.75 INCH POWER AS-40 T-1025, A58	
59	70-154305	5.75 INCH POWER AS-40 T-1025, A59	
60	70-154306	5.75 INCH POWER AS-40 T-1025, A60	
61	70-154307	5.75 INCH POWER AS-40 T-1025, A61	
62	70-154308	5.75 INCH POWER AS-40 T-1025, A62	
63	70-154309	5.75 INCH POWER AS-40 T-1025, A63	
64	70-154310	5.75 INCH POWER AS-40 T-1025, A64	
65	70-154311	5.75 INCH POWER AS-40 T-1025, A65	
66	70-154312	5.75 INCH POWER AS-40 T-1025, A66	
67	70-154313	5.75 INCH POWER AS-40 T-1025, A67	
68	70-154314	5.75 INCH POWER AS-40 T-1025, A68	
69	70-154315	5.75 INCH POWER AS-40 T-1025, A69	
70	70-154316	5.75 INCH POWER AS-40 T-1025, A70	
71	70-154317	5.75 INCH POWER AS-40 T-1025, A71	
72	70-154318	5.75 INCH POWER AS-40 T-1025, A72	

REF ID	PART NO	DESCRIPTION
34	N	25-254147 IC: PDS70AC10-1TYPE
35	N	25-254148 IC: PDS70A & 15TYPE
36	N	25-254147 IC: PDS70AC10
37	N	25-254148 IC: PDS70AC15
38	N	25-254149 IC: PDS70AC10
39	N	25-254149 IC: PDS70AC15
40	N	25-254150 IC: PDS70AC10
41	N	25-254151 IC: PDS70AC15
42	N	25-254152 IC: PDS70AC10
43	N	25-254153 IC: PDS70AC15
44	N	25-254154 IC: PDS70AC10
45	N	25-254155 IC: PDS70AC15
46	N	25-254156 IC: PDS70AC10
47	N	25-254157 IC: PDS70AC15
48	N	25-254158 IC: PDS70AC10
49	N	25-254159 IC: PDS70AC15
50	N	25-254160 IC: PDS70AC10
51	N	25-254161 IC: PDS70AC15
52	N	25-254162 IC: PDS70AC10
53	N	25-254163 IC: PDS70AC15
54	N	25-254164 IC: PDS70AC10
55	N	25-254165 IC: PDS70AC15
56	N	25-254166 IC: PDS70AC10
57	N	25-254167 IC: PDS70AC15
58	N	25-254168 IC: PDS70AC10
59	N	25-254169 IC: PDS70AC15
60	N	25-254170 IC: PDS70AC10
61	N	25-254171 IC: PDS70AC15
62	N	25-254172 IC: PDS70AC10
63	N	25-254173 IC: PDS70AC15
64	N	25-254174 IC: PDS70AC10
65	N	25-254175 IC: PDS70AC15
66	N	25-254176 IC: PDS70AC10
67	N	25-254177 IC: PDS70AC15
68	N	25-254178 IC: PDS70AC10
69	N	25-254179 IC: PDS70AC15
70	N	25-254180 IC: PDS70AC10
71	N	25-254181 IC: PDS70AC15
72	N	25-254182 IC: PDS70AC10
73	N	25-254183 IC: PDS70AC15
74	N	25-254184 IC: PDS70AC10
75	N	25-254185 IC: PDS70AC15
76	N	25-254186 IC: PDS70AC10
77	N	25-254187 IC: PDS70AC15
78	N	25-254188 IC: PDS70AC10
79	N	25-254189 IC: PDS70AC15
80	N	25-254190 IC: PDS70AC10
81	N	25-254191 IC: PDS70AC15
82	N	25-254192 IC: PDS70AC10
83	N	25-254193 IC: PDS70AC15
84	N	25-254194 IC: PDS70AC10
85	N	25-254195 IC: PDS70AC15
86	N	25-254196 IC: PDS70AC10
87	N	25-254197 IC: PDS70AC15
88	N	25-254198 IC: PDS70AC10
89	N	25-254199 IC: PDS70AC15
90	N	25-254200 IC: PDS70AC10
91	N	25-254201 IC: PDS70AC15
92	N	25-254202 IC: PDS70AC10
93	N	25-254203 IC: PDS70AC15
94	N	25-254204 IC: PDS70AC10
95	N	25-254205 IC: PDS70AC15
96	N	25-254206 IC: PDS70AC10
97	N	25-254207 IC: PDS70AC15
98	N	25-254208 IC: PDS70AC10
99	N	25-254209 IC: PDS70AC15
100	N	25-254210 IC: PDS70AC10

*NOTE: N = New Port
SYMBOL FOR DESTINATION

- (A) AAE (U.S.A.)
- (B) UK (England)
- (C) CLAC (Canada)
- (E) CEE (Europe)
- (F) FPM (Japan)
- (G) SAA (Australia)
- (H) C.T. (Continental Area)

REF NO	INLET NO.	DESCRIPTION
1.0130	328.327330	W 407 W 300 S 1000 0300Z
1.0131	328.327330	W 407 W 300 S 1000 0400Z
1.0132	328.327330	W 407 W 300 S 1000 0500Z
1.0133	328.327330	W 407 W 300 S 1000 0600Z
1.0134	328.327330	W 407 W 300 S 1000 0700Z
1.0135	328.327330	W 407 W 300 S 1000 0800Z
1.0136	328.327330	W 407 W 300 S 1000 0900Z
1.0137	328.327330	W 407 W 300 S 1000 1000Z
1.0138	328.327330	W 407 W 300 S 1000 1100Z
1.0139	328.327330	W 407 W 300 S 1000 1200Z
1.0140	328.327330	W 407 W 300 S 1000 1300Z
1.0141	328.327330	W 407 W 300 S 1000 1400Z
1.0142	328.327330	W 407 W 300 S 1000 1500Z
1.0143	328.327330	W 407 W 300 S 1000 1600Z
1.0144	328.327330	W 407 W 300 S 1000 1700Z
1.0145	328.327330	W 407 W 300 S 1000 1800Z
1.0146	328.327330	W 407 W 300 S 1000 1900Z
1.0147	328.327330	W 407 W 300 S 1000 2000Z
1.0148	328.327330	W 407 W 300 S 1000 2100Z
1.0149	328.327330	W 407 W 300 S 1000 2200Z
1.0150	328.327330	W 407 W 300 S 1000 2300Z
1.0151	328.327330	W 407 W 300 S 1000 2400Z
1.0152	328.327330	W 407 W 300 S 1000 2500Z
1.0153	328.327330	W 407 W 300 S 1000 2600Z
1.0154	328.327330	W 407 W 300 S 1000 2700Z
1.0155	328.327330	W 407 W 300 S 1000 2800Z
1.0156	328.327330	W 407 W 300 S 1000 2900Z
1.0157	328.327330	W 407 W 300 S 1000 3000Z
1.0158	328.327330	W 407 W 300 S 1000 3100Z
1.0159	328.327330	W 407 W 300 S 1000 3200Z
1.0160	328.327330	W 407 W 300 S 1000 3300Z
1.0161	328.327330	W 407 W 300 S 1000 3400Z
1.0162	328.327330	W 407 W 300 S 1000 3500Z
1.0163	328.327330	W 407 W 300 S 1000 3600Z
1.0164	328.327330	W 407 W 300 S 1000 3700Z
1.0165	328.327330	W 407 W 300 S 1000 3800Z
1.0166	328.327330	W 407 W 300 S 1000 3900Z
1.0167	328.327330	W 407 W 300 S 1000 4000Z
1.0168	328.327330	W 407 W 300 S 1000 4100Z
1.0169	328.327330	W 407 W 300 S 1000 4200Z
1.0170	328.327330	W 407 W 300 S 1000 4300Z
1.0171	328.327330	W 407 W 300 S 1000 4400Z
1.0172	328.327330	W 407 W 300 S 1000 4500Z
1.0173	328.327330	W 407 W 300 S 1000 4600Z
1.0174	328.327330	W 407 W 300 S 1000 4700Z
1.0175	328.327330	W 407 W 300 S 1000 4800Z
1.0176	328.327330	W 407 W 300 S 1000 4900Z
1.0177	328.327330	W 407 W 300 S 1000 5000Z
1.0178	328.327330	W 407 W 300 S 1000 5100Z
1.0179	328.327330	W 407 W 300 S 1000 5200Z
1.0180	328.327330	W 407 W 300 S 1000 5300Z
1.0181	328.327330	W 407 W 300 S 1000 5400Z
1.0182	328.327330	W 407 W 300 S 1000 5500Z
1.0183	328.327330	W 407 W 300 S 1000 5600Z
1.0184	328.327330	W 407 W 300 S 1000 5700Z
1.0185	328.327330	W 407 W 300 S 1000 5800Z
1.0186	328.327330	W 407 W 300 S 1000 5900Z
1.0187	328.327330	W 407 W 300 S 1000 6000Z
1.0188	328.327330	W 407 W 300 S 1000 6100Z
1.0189	328.327330	W 407 W 300 S 1000 6200Z
1.0190	328.327330	W 407 W 300 S 1000 6300Z
1.0191	328.327330	W 407 W 300 S 1000 6400Z
1.0192	328.327330	W 407 W 300 S 1000 6500Z
1.0193	328.327330	W 407 W 300 S 1000 6600Z
1.0194	328.327330	W 407 W 300 S 1000 6700Z
1.0195	328.327330	W 407 W 300 S 1000 6800Z
1.0196	328.327330	W 407 W 300 S 1000 6900Z
1.0197	328.327330	W 407 W 300 S 1000 7000Z
1.0198	328.327330	W 407 W 300

3. CPU DECKARD

Part No.	Part Name	Part Description
CPU/PC BOARD		
1-011-1	1-011-1	1-011-1
1-012	1-012	1-012
1-013	1-013	1-013
1-014	1-014	1-014
1-015	1-015	1-015
1-016	1-016	1-016
1-017	1-017	1-017
1-018	1-018	1-018
1-019	1-019	1-019
1-020	1-020	1-020
1-021	1-021	1-021
1-022	1-022	1-022
1-023	1-023	1-023
1-024	1-024	1-024
1-025	1-025	1-025
1-026	1-026	1-026
1-027	1-027	1-027
1-028	1-028	1-028
1-029	1-029	1-029
1-030	1-030	1-030
1-031	1-031	1-031
1-032	1-032	1-032
1-033	1-033	1-033
1-034	1-034	1-034
1-035	1-035	1-035
1-036	1-036	1-036
1-037	1-037	1-037
1-038	1-038	1-038
1-039	1-039	1-039
1-040	1-040	1-040
1-041	1-041	1-041
1-042	1-042	1-042
1-043	1-043	1-043
1-044	1-044	1-044
1-045	1-045	1-045
1-046	1-046	1-046
1-047	1-047	1-047
1-048	1-048	1-048
1-049	1-049	1-049
1-050	1-050	1-050
1-051	1-051	1-051
1-052	1-052	1-052
1-053	1-053	1-053
1-054	1-054	1-054
1-055	1-055	1-055
1-056	1-056	1-056
1-057	1-057	1-057
1-058	1-058	1-058
1-059	1-059	1-059
1-060	1-060	1-060
1-061	1-061	1-061
1-062	1-062	1-062
1-063	1-063	1-063
1-064	1-064	1-064
1-065	1-065	1-065
1-066	1-066	1-066
1-067	1-067	1-067
1-068	1-068	1-068
1-069	1-069	1-069
1-070	1-070	1-070
1-071	1-071	1-071
1-072	1-072	1-072
1-073	1-073	1-073
1-074	1-074	1-074
1-075	1-075	1-075
1-076	1-076	1-076
1-077	1-077	1-077
1-078	1-078	1-078
1-079	1-079	1-079
1-080	1-080	1-080
1-081	1-081	1-081
1-082	1-082	1-082
1-083	1-083	1-083
1-084	1-084	1-084
1-085	1-085	1-085
1-086	1-086	1-086
1-087	1-087	1-087
1-088	1-088	1-088
1-089	1-089	1-089
1-090	1-090	1-090
1-091	1-091	1-091
1-092	1-092	1-092
1-093	1-093	1-093
1-094	1-094	1-094
1-095	1-095	1-095
1-096	1-096	1-096
1-097	1-097	1-097
1-098	1-098	1-098
1-099	1-099	1-099
1-100	1-100	1-100

4. FLOW OF PE SOLARIZATION

REF NO	PART NO	DESCRIPTION
9.82	95-01498	W BUSHING 1/8"
9.82.1	95-01499	2 - JAWBOL
9.82	95-01499	2 - JAWBOL 1/8"X5/16"
9.82.1	95-01499	2 - JAWBOL 1/8"X5/16"

4. FLEMING'S BOARD

REF NO.	PAGE NO.	DESCRIPTION
1.6.1	12-13	1. INTRODUCTION
1.6.2	14-15	2. SCOPE
1.6.3	16-17	3. REFERENCES

6. OPERATIONS/IN BOARD

GEN NO.	PORT NO.	DESCRIPTION
0-001	0-000000	0-0000000000
0-002	0-000001	0-0000000001
0-003	0-000002	0-0000000002
0-004	0-000003	0-0000000003
0-005	0-000004	0-0000000004
0-006	0-000005	0-0000000005
0-007	0-000006	0-0000000006
0-008	0-000007	0-0000000007
0-009	0-000008	0-0000000008
0-010	0-000009	0-0000000009
0-011	0-000010	0-0000000010
0-012	0-000011	0-0000000011
0-013	0-000012	0-0000000012
0-014	0-000013	0-0000000013
0-015	0-000014	0-0000000014
0-016	0-000015	0-0000000015
0-017	0-000016	0-0000000016
0-018	0-000017	0-0000000017
0-019	0-000018	0-0000000018
0-020	0-000019	0-0000000019
0-021	0-000020	0-0000000020
0-022	0-000021	0-0000000021
0-023	0-000022	0-0000000022
0-024	0-000023	0-0000000023
0-025	0-000024	0-0000000024
0-026	0-000025	0-0000000025
0-027	0-000026	0-0000000026
0-028	0-000027	0-0000000027
0-029	0-000028	0-0000000028
0-030	0-000029	0-0000000029
0-031	0-000030	0-0000000030
0-032	0-000031	0-0000000031
0-033	0-000032	0-0000000032
0-034	0-000033	0-0000000033
0-035	0-000034	0-0000000034
0-036	0-000035	0-0000000035
0-037	0-000036	0-0000000036
0-038	0-000037	0-0000000037
0-039	0-000038	0-0000000038
0-040	0-000039	0-0000000039
0-041	0-000040	0-0000000040
0-042	0-000041	0-0000000041
0-043	0-000042	0-0000000042
0-044	0-000043	0-0000000043
0-045	0-000044	0-0000000044
0-046	0-000045	0-0000000045
0-047	0-000046	0-0000000046
0-048	0-000047	0-0000000047
0-049	0-000048	0-0000000048
0-050	0-000049	0-0000000049
0-051	0-000050	0-0000000050
0-052	0-000051	0-0000000051
0-053	0-000052	0-0000000052
0-054	0-000053	0-0000000053
0-055	0-000054	0-0000000054
0-056	0-000055	0-0000000055
0-057	0-000056	0-0000000056
0-058	0-000057	0-0000000057
0-059	0-000058	0-0000000058
0-060	0-000059	0-0000000059
0-061	0-000060	0-0000000060
0-062	0-000061	0-0000000061
0-063	0-000062	0-0000000062
0-064	0-000063	0-0000000063
0-065	0-000064	0-0000000064
0-066	0-000065	0-0000000065
0-067	0-000066	0-0000000066
0-068	0-000067	0-0000000067
0-069	0-000068	0-0000000068
0-070	0-000069	0-0000000069
0-071	0-000070	0-0000000070
0-072	0-000071	0-0000000071
0-073	0-000072	0-0000000072
0-074	0-000073	0-0000000073
0-075	0-000074	0-0000000074
0-076	0-000075	0-0000000075
0-077	0-000076	0-0000000076
0-078	0-000077	0-0000000077
0-079	0-000078	0-0000000078
0-080	0-000079	0-0000000079
0-081	0-000080	0-0000000080

7. OPERATION OF PC BOARD

REF ID	PAGE NO.	DESCRIPTION
10961-010	25-26-01	WEIGHT INCREASE

M. OPERATION OF PC BOARD

REF ID	DATE	DESCRIPTION
1000000000	01/01/2010	NEW YORK STATE DEPARTMENT OF TAXATION

9. JACK PC BOARD

RRP MS	Product MS	Chemical Name
4.32	21.387346	4'-O-methyl-2,6-dimethylphenol
6.63.2	102.076677	2,6-Dimethyl-4-methoxyphenol
6.63.3	68.068939	4-Methoxy-2,6-dimethylphenol
6.63.4	54.057154	2,6-Dimethyl-4-methoxyphenol
9.42	44.027403	2,6-Dimethyl-4-methoxyphenol
9.43.4.4	26.077109	2,6-Dimethyl-4-methoxyphenol

10. POWER SUPPLY PC BOARD

REF NO.	PART NO.	DESCRIPTION
00-02	25-075007	25-075007-01
00-02	25-075008	25-075008-01
00-02	25-075009	25-075009-01
00-04	25-080200	25-080200-01
00-05	25-080201	25-080201-01
00-10	25-080202	25-080202-01
00-10	25-080203	25-080203-01
00-10	25-080204	25-080204-01
00-10	25-080205	25-080205-01
00-10	25-080206	25-080206-01
00-10	25-080207	25-080207-01
00-10	25-080208	25-080208-01
00-10	25-080209	25-080209-01
00-10	25-080210	25-080210-01
00-10	25-080211	25-080211-01
00-10	25-080212	25-080212-01
00-10	25-080213	25-080213-01
00-10	25-080214	25-080214-01
00-10	25-080215	25-080215-01
00-10	25-080216	25-080216-01
00-10	25-080217	25-080217-01
00-10	25-080218	25-080218-01
00-10	25-080219	25-080219-01
00-10	25-080220	25-080220-01
00-10	25-080221	25-080221-01
00-10	25-080222	25-080222-01
00-10	25-080223	25-080223-01
00-10	25-080224	25-080224-01
00-10	25-080225	25-080225-01
00-10	25-080226	25-080226-01
00-10	25-080227	25-080227-01
00-10	25-080228	25-080228-01
00-10	25-080229	25-080229-01
00-10	25-080230	25-080230-01
00-10	25-080231	25-080231-01
00-10	25-080232	25-080232-01
00-10	25-080233	25-080233-01
00-10	25-080234	25-080234-01
00-10	25-080235	25-080235-01
00-10	25-080236	25-080236-01
00-10	25-080237	25-080237-01
00-10	25-080238	25-080238-01
00-10	25-080239	25-080239-01
00-10	25-080240	25-080240-01
00-10	25-080241	25-080241-01
00-10	25-080242	25-080242-01
00-10	25-080243	25-080243-01
00-10	25-080244	25-080244-01
00-10	25-080245	25-080245-01
00-10	25-080246	25-080246-01
00-10	25-080247	25-080247-01
00-10	25-080248	25-080248-01
00-10	25-080249	25-080249-01
00-10	25-080250	25-080250-01
00-10	25-080251	25-080251-01
00-10	25-080252	25-080252-01
00-10	25-080253	25-080253-01
00-10	25-080254	25-080254-01
00-10	25-080255	25-080255-01
00-10	25-080256	25-080256-01
00-10	25-080257	25-080257-01
00-10	25-080258	25-080258-01
00-10	25-080259	25-080259-01
00-10	25-080260	25-080260-01
00-10	25-080261	25-080261-01
00-10	25-080262	25-080262-01
00-10	25-080263	25-080263-01
00-10	25-080264	25-080264-01
00-10	25-080265	25-080265-01
00-10	25-080266	25-080266-01
00-10	25-080267	25-080267-01
00-10	25-080268	25-080268-01
00-10	25-080269	25-080269-01
00-10	25-080270	25-080270-01
00-10	25-080271	25-080271-01
00-10	25-080272	25-080272-01
00-10	25-080273	25-080273-01
00-10	25-080274	25-080274-01
00-10	25-080275	25-080275-01
00-10	25-080276	25-080276-01
00-10	25-080277	25-080277-01
00-10	25-080278	25-080278-01
00-10	25-080279	25-080279-01
00-10	25-080280	25-080280-01
00-10	25-080281	25-080281-01
00-10	25-080282	25-080282-01
00-10	25-080283	25-080283-01
00-10	25-080284	25-080284-01
00-10	25-080285	25-080285-01
00-10	25-080286	25-080286-01
00-10	25-080287	25-080287-01
00-10	25-080288	25-080288-01
00-10	25-080289	25-080289-01
00-10	25-080290	25-080290-01
00-10	25-080291	25-080291-01
00-10	25-080292	25-080292-01
00-10	25-080293	25-080293-01
00-10	25-080294	25-080294-01
00-10	25-080295	25-080295-01
00-10	25-080296	25-080296-01
00-10	25-080297	25-080297-01
00-10	25-080298	25-080298-01
00-10	25-080299	25-080299-01
00-10	25-080300	25-080300-01
00-10	25-080301	25-080301-01
00-10	25-080302	25-080302-01
00-10	25-080303	25-080303-01
00-10	25-080304	25-080304-01
00-10	25-080305	25-080305-01
00-10	25-080306	25-080306-01
00-10	25-080307	25-080307-01
00-10	25-080308	25-080308-01
00-10	25-080309	25-080309-01
00-10	25-080310	25-080310-01
00-10	25-080311	25-080311-01
00-10	25-080312	25-080312-01
00-10	25-080313	25-080313-01
00-10	25-080314	25-080314-01
00-10	25-080315	25-080315-01
00-10	25-080316	25-080316-01
00-10	25-080317	25-080317-01
00-10	25-080318	25-080318-01
00-10	25-080319	25-080319-01
00-10	25-080320	25-080320-01
00-10	25-080321	25-080321-01
00-10	25-080322	25-080322-01
00-10	25-080323	25-080323-01
00-10	25-080324	25-080324-01
00-10	25-080325	25-080325-01
00-10	25-080326	25-080326-01
00-10	25-080327	25-080327-01
00-10	25-080328	25-080328-01
00-10	25-080329	25-080329-01
00-10	25-080330	25-080330-01
00-10	25-080331	25-080331-01
00-10	25-080332	25-080332-01
00-10	25-080333	25-080333-01
00-10	25-080334	25-080334-01
00-10	25-080335	25-080335-01
00-10	25-080336	25-080336-01
00-10	25-080337	25-080337-01
00-10	25-080338	25-080338-01
00-10	25-080339	25-080339-01
00-10	25-080340	25-080340-01
00-10	25-080341	25-080341-01
00-10	25-080342	25-080342-01
00-10	25-080343	25-080343-01
00-10	25-080344	25-080344-01
00-10	25-080345	25-080345-01
00-10	25-080346	25-080346-01
00-10	25-080347	25-080347-01
00-10	25-080348	25-080348-01
00-10	25-080349	25-080349-01
00-10	25-080350	25-080350-01
00-10	25-080351	25-080351-01
00-10	25-080352	25-080352-01
00-10	25-080353	25-080353-01
00-10	25-080354	25-080354-01
00-10	25-080355	25-080355-01
00-10	25-080356	25-080356-01
00-10	25-080357	25-080357-01
00-10	25-080358	25-080358-01
00-10	25-080359	25-080359-01
00-10	25-080360	25-080360-01
00-10	25-080361	25-080361-01
00-10	25-080362	25-080362-01
00-10	25-080363	25-080363-01
00-10	25-080364	25-080364-01
00-10	25-080365	25-080365-01
00-10	25-080366	25-080366-01
00-10	25-080367	25-080367-01
00-10	25-080368	25-080368-01
00-10	25-080369	25-080369-01
00-10	25-080370	25-080370-01
00-10	25-080371	25-080371-01
00-10	25-080372	25-080372-01
00-10	25-080373	25-080373-01
00-10	25-080374	25-080374-01
00-10	25-080375	25-080375-01
00-10	25-080376	25-080376-01
00-10	25-080377	25-080377-01
00-10	25-080378	25-080378-01
00-10	25-080379	25-080379-01
00-10	25-080380	25-080380-01
00-10	25-080381	25-080381-01
00-10	25-080382	25-080382-01
00-10	25-080383	25-080383-01
00-10	25-080384	25-080384-01
00-10	25-080385	25-080385-01
00-10	25-080386	25-080386-01
00-10	25-080387	25-080387-01
00-10	25-080388	25-080388-01
00-10	25-080389	25-080389-01
00-10	25-080390	25-080390-01
00-10	25-080391	25-080391-01
00-10	25-080392	25-080392-01
00-10	25-080393	25-080393-01
00-10	25-080394	25-080394-01
00-10	25-080395	25-080395-01
00-10	25-080396	25-080396-01
00-10	25-080397	25-080397-01
00-10	25-080398	25-080398-01
00-10	25-080399	25-080399-01
00-10	25-080400	25-080400-01
00-10	25-080401	25-080401-01
00-10	25-080402	25-080402-01
00-10	25-080403	25-080403-01
00-10	25-080404	25-080404-01
00-10	25-080405	25-080405-01
00-10	25-080406	25-080406-01
00-10	25-080407	25-080407-01
00-10	25-080408	25-080408-01
00-10	25-080409	25-080409-01
00-10	25-080410	25-080410-01
00-10	25-080411	25-080411-01
00-10	25-080412	25-080412-01
00-10	25-080413	25-080413-01
00-10	25-080414	25-080414-01
00-10	25-080415	25-080415-01
00-10	25-080416	25-080416-01
00-10	25-080417	25-080417-01
00-10	25-080418	25-080418-01
00-10	25-080419	25-080419-01
00-10	25-080420	25-080420-01
00-10	25-080421	25-080421-01
00-10	25-080422	25-080422-01
00-10	25-080423	25-080423-01
00-10	25-080424	25-080424-01
00-10	25-080425	25-080425-01
00-10	25-080426	25-080426-01
00-10	25-080427	25-080427-01
00-10	25-080428	25-080428-01
00-10	25-080429	25-080429-01
00-10	25-080430	25-080430-01
00-10	25-080431	25-080431-01
00-10	25-080432	25-080432-01
00-10	25-080433	25-080433-01
00-10	25-080434	25-080434-01
00-10	25-080435	25-080435-01
00-10	25-080436	25-080436-01
00-10	25-080437	25-080437-01
00-10	25-080438	25-080438-01
00-10	25-080439	25-080439-01
00-10	25-080440	25-080440-01
00-10	25-080441	25-080441-01
00-10	25-080442	25-080442-01
00-10	25-080443	25-080443-01
00-10	25-080444	25-080444-01
00-10	25-080445	25-080445-01
00-10	25-080446	25-080446-01
00-10	25-080447	25-080447-01
00-10	25-080448	25-080448-01
00-10	25-080449	25-080449-01
00-10	25-080450	25-080450-01
00-10	25-080451	25-080451-01
00-10	25-080452	25-080452-01
00-10	25-080453	25-080453-01
00-10	25-080454	25-080454-01
00-10	25-080455	25-080455-01
00-10	25-080456	25-080456-01
00-10	25-080457	25-080457-01
00-10	25-080458	25-080458-01
00-10	25-080459	25-080459-01
00-10	25-080460	25-080460-01
00-10	25-080461	25-080461-01
00-10	25-080462	25-080462-01
00-10	25-080463	25-080463-01
00-10	25-080464	25-080464-01
00-10	25-080465	25-080465-01
00-10	25-080466	25-080466-01
00-10	25-080467	25-080467-01
00-10	25-080468	25-080468-01
00-10	25-080469	25-080469-01
00-10	25-080470	25-080470-01
00-10	25-080471	

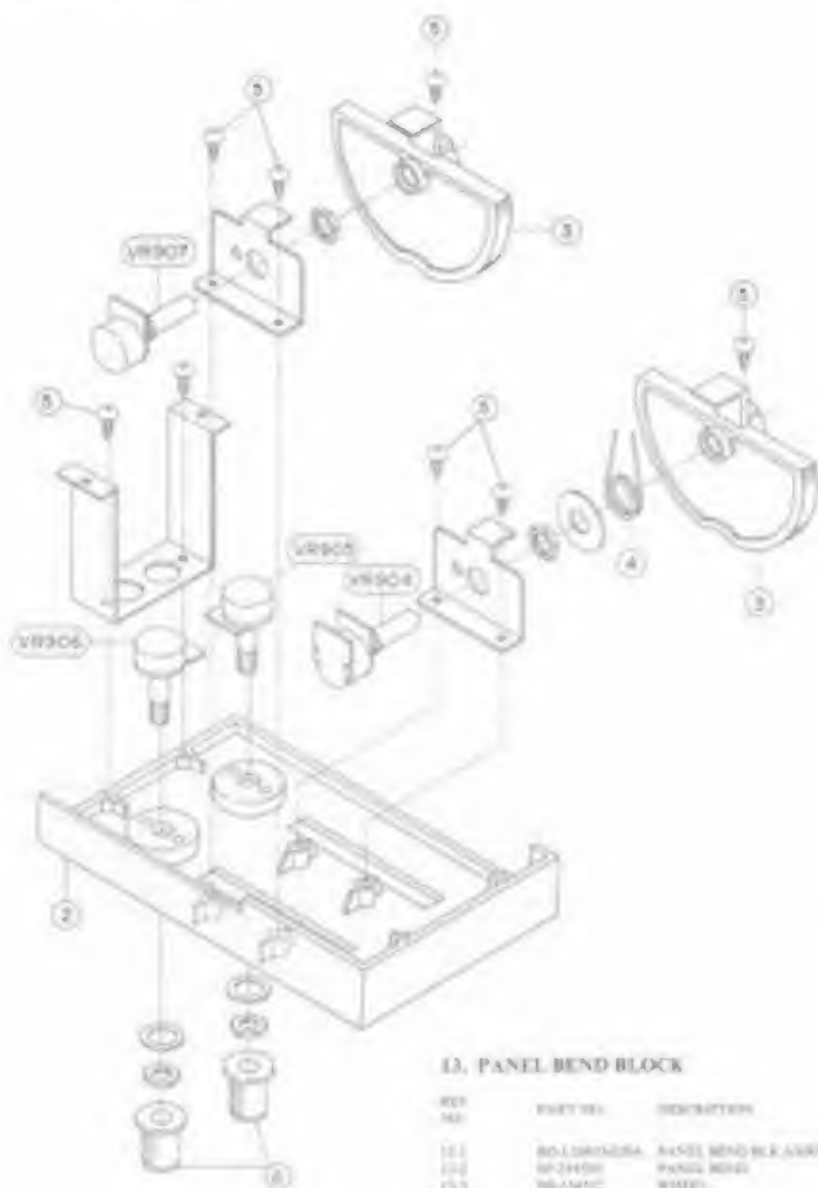
14. FILTER PCB BOARD

ISSN	Printed	Electronic
0143-9812	0143-9812	1366-5847

12. MOUNTING PC BOARD

REF NO.	PART NO.	DESCRIPTION
01-186	01-186-01	TR 2000000
01-186-1	01-186-01-1	TR 2000000 10000
01-186-2	01-186-01-2	TR 2000000 20000
01-186-3	01-186-01-3	TR 2000000 30000

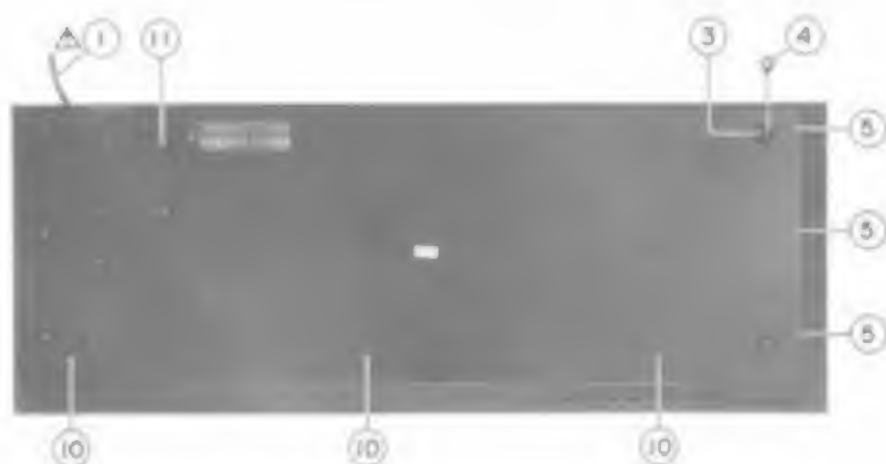
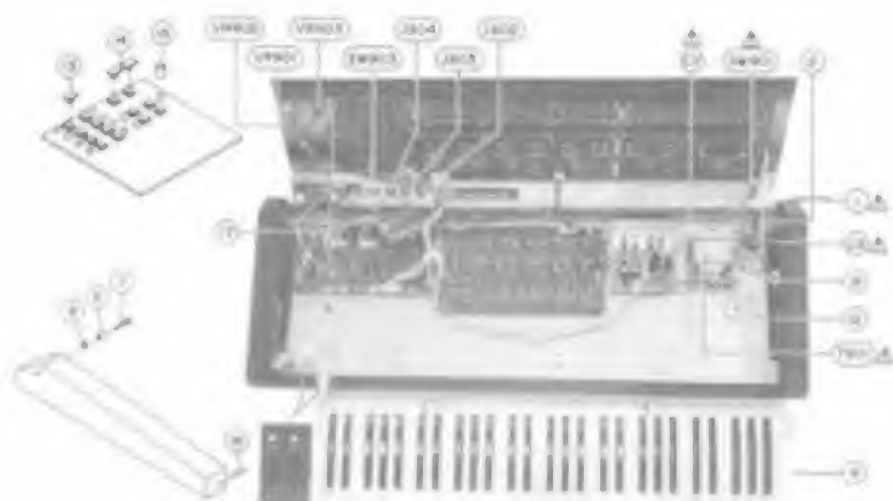
PANEL BEND BLOCK



13. PANEL BEND BLOCK

REV	DATE	DESCRIPTION
1.0	05/11/2012	AS-012 BOND W/ R. JORD
1.1	06/24/2012	PAYEE BOND
1.2	06/24/2012	W/ JORD
1.3	06/24/2012	OF BOND
1.4	06/24/2012	OF BOND
1.5	06/24/2012	OF BOND
1.6	06/24/2012	OF BOND
1.7	06/24/2012	OF BOND
1.8	06/24/2012	OF BOND
1.9	06/24/2012	OF BOND
2.0	06/24/2012	OF BOND
2.1	06/24/2012	OF BOND
2.2	06/24/2012	OF BOND
2.3	06/24/2012	OF BOND
2.4	06/24/2012	OF BOND
2.5	06/24/2012	OF BOND
2.6	06/24/2012	OF BOND
2.7	06/24/2012	OF BOND
2.8	06/24/2012	OF BOND
2.9	06/24/2012	OF BOND
3.0	06/24/2012	OF BOND
3.1	06/24/2012	OF BOND
3.2	06/24/2012	OF BOND
3.3	06/24/2012	OF BOND
3.4	06/24/2012	OF BOND
3.5	06/24/2012	OF BOND
3.6	06/24/2012	OF BOND
3.7	06/24/2012	OF BOND
3.8	06/24/2012	OF BOND
3.9	06/24/2012	OF BOND
4.0	06/24/2012	OF BOND
4.1	06/24/2012	OF BOND
4.2	06/24/2012	OF BOND
4.3	06/24/2012	OF BOND
4.4	06/24/2012	OF BOND
4.5	06/24/2012	OF BOND
4.6	06/24/2012	OF BOND
4.7	06/24/2012	OF BOND
4.8	06/24/2012	OF BOND
4.9	06/24/2012	OF BOND
5.0	06/24/2012	OF BOND
5.1	06/24/2012	OF BOND
5.2	06/24/2012	OF BOND
5.3	06/24/2012	OF BOND
5.4	06/24/2012	OF BOND
5.5	06/24/2012	OF BOND
5.6	06/24/2012	OF BOND
5.7	06/24/2012	OF BOND
5.8	06/24/2012	OF BOND
5.9	06/24/2012	OF BOND
6.0	06/24/2012	OF BOND
6.1	06/24/2012	OF BOND
6.2	06/24/2012	OF BOND
6.3	06/24/2012	OF BOND
6.4	06/24/2012	OF BOND
6.5	06/24/2012	OF BOND
6.6	06/24/2012	OF BOND
6.7	06/24/2012	OF BOND
6.8	06/24/2012	OF BOND
6.9	06/24/2012	OF BOND
7.0	06/24/2012	OF BOND
7.1	06/24/2012	OF BOND
7.2	06/24/2012	OF BOND
7.3	06/24/2012	OF BOND
7.4	06/24/2012	OF BOND
7.5	06/24/2012	OF BOND
7.6	06/24/2012	OF BOND
7.7	06/24/2012	OF BOND
7.8	06/24/2012	OF BOND
7.9	06/24/2012	OF BOND
8.0	06/24/2012	OF BOND
8.1	06/24/2012	OF BOND
8.2	06/24/2012	OF BOND
8.3	06/24/2012	OF BOND
8.4	06/24/2012	OF BOND
8.5	06/24/2012	OF BOND
8.6	06/24/2012	OF BOND
8.7	06/24/2012	OF BOND
8.8	06/24/2012	OF BOND
8.9	06/24/2012	OF BOND
9.0	06/24/2012	OF BOND
9.1	06/24/2012	OF BOND
9.2	06/24/2012	OF BOND
9.3	06/24/2012	OF BOND
9.4	06/24/2012	OF BOND
9.5	06/24/2012	OF BOND
9.6	06/24/2012	OF BOND
9.7	06/24/2012	OF BOND
9.8	06/24/2012	OF BOND
9.9	06/24/2012	OF BOND
10.0	06/24/2012	OF BOND

ASSEMBLY BLOCK



FINAL ASSEMBLY BLOCK



14. ASSEMBLY BLOCK

REF NO.	PART NO.	DESCRIPTION
14.1A	1W-06407	Δ AC CORD (2 CORDS) 2P-2L
14.1B	1W-06408	Δ AC CORD (2 CORDS) 3P-2L
14.1C	1W-06409	Δ AC CORD (2 CORDS) 2P-2L
14.1D	1W-06410	Δ AC CORD (2 CORDS) 3P-2L
14.1E	1W-06411	Δ AC CORD (2 CORDS) 2P-2L
14.1F	1W-06412	Δ AC CORD (2 CORDS) 2P-2L
14.1G	1W-06413	Δ AC CORD (2 CORDS) 2P-2L
14.1H	1W-06414	Δ AC CORD (2 CORDS) 2P-2L
14.1I	1W-06415	Δ AC CORD (2 CORDS) 2P-2L
14.1J	1W-06416	Δ AC CORD (2 CORDS) 2P-2L
14.1K	1W-06417	Δ AC CORD (2 CORDS) 2P-2L
14.1L	1W-06418	Δ AC CORD (2 CORDS) 2P-2L
14.1M	1W-06419	Δ AC CORD (2 CORDS) 2P-2L
14.1N	1W-06420	Δ AC CORD (2 CORDS) 2P-2L
14.1O	1W-06421	Δ AC CORD (2 CORDS) 2P-2L
14.1P	1W-06422	Δ AC CORD (2 CORDS) 2P-2L
14.1Q	1W-06423	Δ AC CORD (2 CORDS) 2P-2L
14.1R	1W-06424	Δ AC CORD (2 CORDS) 2P-2L
14.1S	1W-06425	Δ AC CORD (2 CORDS) 2P-2L
14.1T	1W-06426	Δ AC CORD (2 CORDS) 2P-2L
14.1U	1W-06427	Δ AC CORD (2 CORDS) 2P-2L
14.1V	1W-06428	Δ AC CORD (2 CORDS) 2P-2L
14.1W	1W-06429	Δ AC CORD (2 CORDS) 2P-2L
14.1X	1W-06430	Δ AC CORD (2 CORDS) 2P-2L
14.1Y	1W-06431	Δ AC CORD (2 CORDS) 2P-2L
14.1Z	1W-06432	Δ AC CORD (2 CORDS) 2P-2L

REF NO.	PART NO.	DESCRIPTION
14.2A	1W-06433	Δ AC CORD (2 CORDS) 2P-2L
14.2B	1W-06434	Δ AC CORD (2 CORDS) 2P-2L
14.2C	1W-06435	Δ AC CORD (2 CORDS) 2P-2L
14.2D	1W-06436	Δ AC CORD (2 CORDS) 2P-2L
14.2E	1W-06437	Δ AC CORD (2 CORDS) 2P-2L
14.2F	1W-06438	Δ AC CORD (2 CORDS) 2P-2L
14.2G	1W-06439	Δ AC CORD (2 CORDS) 2P-2L
14.2H	1W-06440	Δ AC CORD (2 CORDS) 2P-2L
14.2I	1W-06441	Δ AC CORD (2 CORDS) 2P-2L
14.2J	1W-06442	Δ AC CORD (2 CORDS) 2P-2L
14.2K	1W-06443	Δ AC CORD (2 CORDS) 2P-2L
14.2L	1W-06444	Δ AC CORD (2 CORDS) 2P-2L
14.2M	1W-06445	Δ AC CORD (2 CORDS) 2P-2L
14.2N	1W-06446	Δ AC CORD (2 CORDS) 2P-2L
14.2O	1W-06447	Δ AC CORD (2 CORDS) 2P-2L
14.2P	1W-06448	Δ AC CORD (2 CORDS) 2P-2L
14.2Q	1W-06449	Δ AC CORD (2 CORDS) 2P-2L
14.2R	1W-06450	Δ AC CORD (2 CORDS) 2P-2L
14.2S	1W-06451	Δ AC CORD (2 CORDS) 2P-2L
14.2T	1W-06452	Δ AC CORD (2 CORDS) 2P-2L
14.2U	1W-06453	Δ AC CORD (2 CORDS) 2P-2L
14.2V	1W-06454	Δ AC CORD (2 CORDS) 2P-2L
14.2W	1W-06455	Δ AC CORD (2 CORDS) 2P-2L
14.2X	1W-06456	Δ AC CORD (2 CORDS) 2P-2L
14.2Y	1W-06457	Δ AC CORD (2 CORDS) 2P-2L
14.2Z	1W-06458	Δ AC CORD (2 CORDS) 2P-2L

15. FINAL ASSEMBLY BLOCK

REF NO.	PART NO.	DESCRIPTION
15.1A	1W-06459	Δ AC CORD (2 CORDS) 2P-2L
15.1B	1W-06460	Δ AC CORD (2 CORDS) 2P-2L
15.1C	1W-06461	Δ AC CORD (2 CORDS) 2P-2L
15.1D	1W-06462	Δ AC CORD (2 CORDS) 2P-2L
15.1E	1W-06463	Δ AC CORD (2 CORDS) 2P-2L
15.1F	1W-06464	Δ AC CORD (2 CORDS) 2P-2L
15.1G	1W-06465	Δ AC CORD (2 CORDS) 2P-2L
15.1H	1W-06466	Δ AC CORD (2 CORDS) 2P-2L
15.1I	1W-06467	Δ AC CORD (2 CORDS) 2P-2L
15.1J	1W-06468	Δ AC CORD (2 CORDS) 2P-2L
15.1K	1W-06469	Δ AC CORD (2 CORDS) 2P-2L
15.1L	1W-06470	Δ AC CORD (2 CORDS) 2P-2L
15.1M	1W-06471	Δ AC CORD (2 CORDS) 2P-2L
15.1N	1W-06472	Δ AC CORD (2 CORDS) 2P-2L
15.1O	1W-06473	Δ AC CORD (2 CORDS) 2P-2L
15.1P	1W-06474	Δ AC CORD (2 CORDS) 2P-2L
15.1Q	1W-06475	Δ AC CORD (2 CORDS) 2P-2L
15.1R	1W-06476	Δ AC CORD (2 CORDS) 2P-2L
15.1S	1W-06477	Δ AC CORD (2 CORDS) 2P-2L
15.1T	1W-06478	Δ AC CORD (2 CORDS) 2P-2L
15.1U	1W-06479	Δ AC CORD (2 CORDS) 2P-2L
15.1V	1W-06480	Δ AC CORD (2 CORDS) 2P-2L
15.1W	1W-06481	Δ AC CORD (2 CORDS) 2P-2L
15.1X	1W-06482	Δ AC CORD (2 CORDS) 2P-2L
15.1Y	1W-06483	Δ AC CORD (2 CORDS) 2P-2L
15.1Z	1W-06484	Δ AC CORD (2 CORDS) 2P-2L

INDEX

4280

[illegible]

INDEX

PART NO.	REF. NO.	PART NO.	REF. NO.	PART NO.	REF. NO.	PART NO.	REF. NO.
80-00001	8-1	80-00011	8-940	80-00001	14-00000		
80-00002	8-2	80-00011	8-941	80-00002	14-00001		
80-00003	8-3	80-00011	8-942	80-00003	14-00002		
80-00004	8-4	80-00011	8-943	80-00004	14-00003		
80-00005	8-5	80-00011	8-944	80-00005	14-00004		
80-00006	8-6	80-00011	8-945	80-00006	14-00005		
80-00007	8-7	80-00011	8-946	80-00007	14-00006		
80-00008	8-8	80-00011	8-947	80-00008	14-00007		
80-00009	8-9	80-00011	8-948	80-00009	14-00008		
80-00010	8-10	80-00011	8-949	80-00010	14-00009		
80-00011	8-11	80-00011	8-950	80-00011	14-00010		
80-00012	8-12	80-00011	8-951	80-00012	14-00011		
80-00013	8-13	80-00011	8-952	80-00013	14-00012		
80-00014	8-14	80-00011	8-953	80-00014	14-00013		
80-00015	8-15	80-00011	8-954	80-00015	14-00014		
80-00016	8-16	80-00011	8-955	80-00016	14-00015		
80-00017	8-17	80-00011	8-956	80-00017	14-00016		
80-00018	8-18	80-00011	8-957	80-00018	14-00017		
80-00019	8-19	80-00011	8-958	80-00019	14-00018		
80-00020	8-20	80-00011	8-959	80-00020	14-00019		
80-00021	8-21	80-00011	8-960	80-00021	14-00020		
80-00022	8-22	80-00011	8-961	80-00022	14-00021		
80-00023	8-23	80-00011	8-962	80-00023	14-00022		
80-00024	8-24	80-00011	8-963	80-00024	14-00023		
80-00025	8-25	80-00011	8-964	80-00025	14-00024		
80-00026	8-26	80-00011	8-965	80-00026	14-00025		
80-00027	8-27	80-00011	8-966	80-00027	14-00026		
80-00028	8-28	80-00011	8-967	80-00028	14-00027		
80-00029	8-29	80-00011	8-968	80-00029	14-00028		
80-00030	8-30	80-00011	8-969	80-00030	14-00029		
80-00031	8-31	80-00011	8-970	80-00031	14-00030		
80-00032	8-32	80-00011	8-971	80-00032	14-00031		
80-00033	8-33	80-00011	8-972	80-00033	14-00032		
80-00034	8-34	80-00011	8-973	80-00034	14-00033		
80-00035	8-35	80-00011	8-974	80-00035	14-00034		
80-00036	8-36	80-00011	8-975	80-00036	14-00035		
80-00037	8-37	80-00011	8-976	80-00037	14-00036		
80-00038	8-38	80-00011	8-977	80-00038	14-00037		
80-00039	8-39	80-00011	8-978	80-00039	14-00038		
80-00040	8-40	80-00011	8-979	80-00040	14-00039		
80-00041	8-41	80-00011	8-980	80-00041	14-00040		
80-00042	8-42	80-00011	8-981	80-00042	14-00041		
80-00043	8-43	80-00011	8-982	80-00043	14-00042		
80-00044	8-44	80-00011	8-983	80-00044	14-00043		
80-00045	8-45	80-00011	8-984	80-00045	14-00044		
80-00046	8-46	80-00011	8-985	80-00046	14-00045		
80-00047	8-47	80-00011	8-986	80-00047	14-00046		
80-00048	8-48	80-00011	8-987	80-00048	14-00047		
80-00049	8-49	80-00011	8-988	80-00049	14-00048		
80-00050	8-50	80-00011	8-989	80-00050	14-00049		
80-00051	8-51	80-00011	8-990	80-00051	14-00050		
80-00052	8-52	80-00011	8-991	80-00052	14-00051		
80-00053	8-53	80-00011	8-992	80-00053	14-00052		
80-00054	8-54	80-00011	8-993	80-00054	14-00053		
80-00055	8-55	80-00011	8-994	80-00055	14-00054		
80-00056	8-56	80-00011	8-995	80-00056	14-00055		
80-00057	8-57	80-00011	8-996	80-00057	14-00056		
80-00058	8-58	80-00011	8-997	80-00058	14-00057		
80-00059	8-59	80-00011	8-998	80-00059	14-00058		
80-00060	8-60	80-00011	8-999	80-00060	14-00059		
80-00061	8-61	80-00011	9-000	80-00061	14-00060		
80-00062	8-62	80-00011	9-001	80-00062	14-00061		
80-00063	8-63	80-00011	9-002	80-00063	14-00062		
80-00064	8-64	80-00011	9-003	80-00064	14-00063		
80-00065	8-65	80-00011	9-004	80-00065	14-00064		
80-00066	8-66	80-00011	9-005	80-00066	14-00065		
80-00067	8-67	80-00011	9-006	80-00067	14-00066		
80-00068	8-68	80-00011	9-007	80-00068	14-00067		
80-00069	8-69	80-00011	9-008	80-00069	14-00068		
80-00070	8-70	80-00011	9-009	80-00070	14-00069		
80-00071	8-71	80-00011	9-010	80-00071	14-00070		
80-00072	8-72	80-00011	9-011	80-00072	14-00071		
80-00073	8-73	80-00011	9-012	80-00073	14-00072		
80-00074	8-74	80-00011	9-013	80-00074	14-00073		
80-00075	8-75	80-00011	9-014	80-00075	14-00074		
80-00076	8-76	80-00011	9-015	80-00076	14-00075		
80-00077	8-77	80-00011	9-016	80-00077	14-00076		
80-00078	8-78	80-00011	9-017	80-00078	14-00077		
80-00079	8-79	80-00011	9-018	80-00079	14-00078		
80-00080	8-80	80-00011	9-019	80-00080	14-00079		
80-00081	8-81	80-00011	9-020	80-00081	14-00080		
80-00082	8-82	80-00011	9-021	80-00082	14-00081		
80-00083	8-83	80-00011	9-022	80-00083	14-00082		
80-00084	8-84	80-00011	9-023	80-00084	14-00083		
80-00085	8-85	80-00011	9-024	80-00085	14-00084		
80-00086	8-86	80-00011	9-025	80-00086	14-00085		
80-00087	8-87	80-00011	9-026	80-00087	14-00086		
80-00088	8-88	80-00011	9-027	80-00088	14-00087		
80-00089	8-89	80-00011	9-028	80-00089	14-00088		
80-00090	8-90	80-00011	9-029	80-00090	14-00089		
80-00091	8-91	80-00011	9-030	80-00091	14-00090		
80-00092	8-92	80-00011	9-031	80-00092	14-00091		
80-00093	8-93	80-00011	9-032	80-00093	14-00092		
80-00094	8-94	80-00011	9-033	80-00094	14-00093		
80-00095	8-95	80-00011	9-034	80-00095	14-00094		
80-00096	8-96	80-00011	9-035	80-00096	14-00095		
80-00097	8-97	80-00011	9-036	80-00097	14-00096		
80-00098	8-98	80-00011	9-037	80-00098	14-00097		
80-00099	8-99	80-00011	9-038	80-00099	14-00098		
80-00100	9-00	80-00011	9-039	80-00100	14-00099		

AKAI

MODEL AX80

SECTION 3

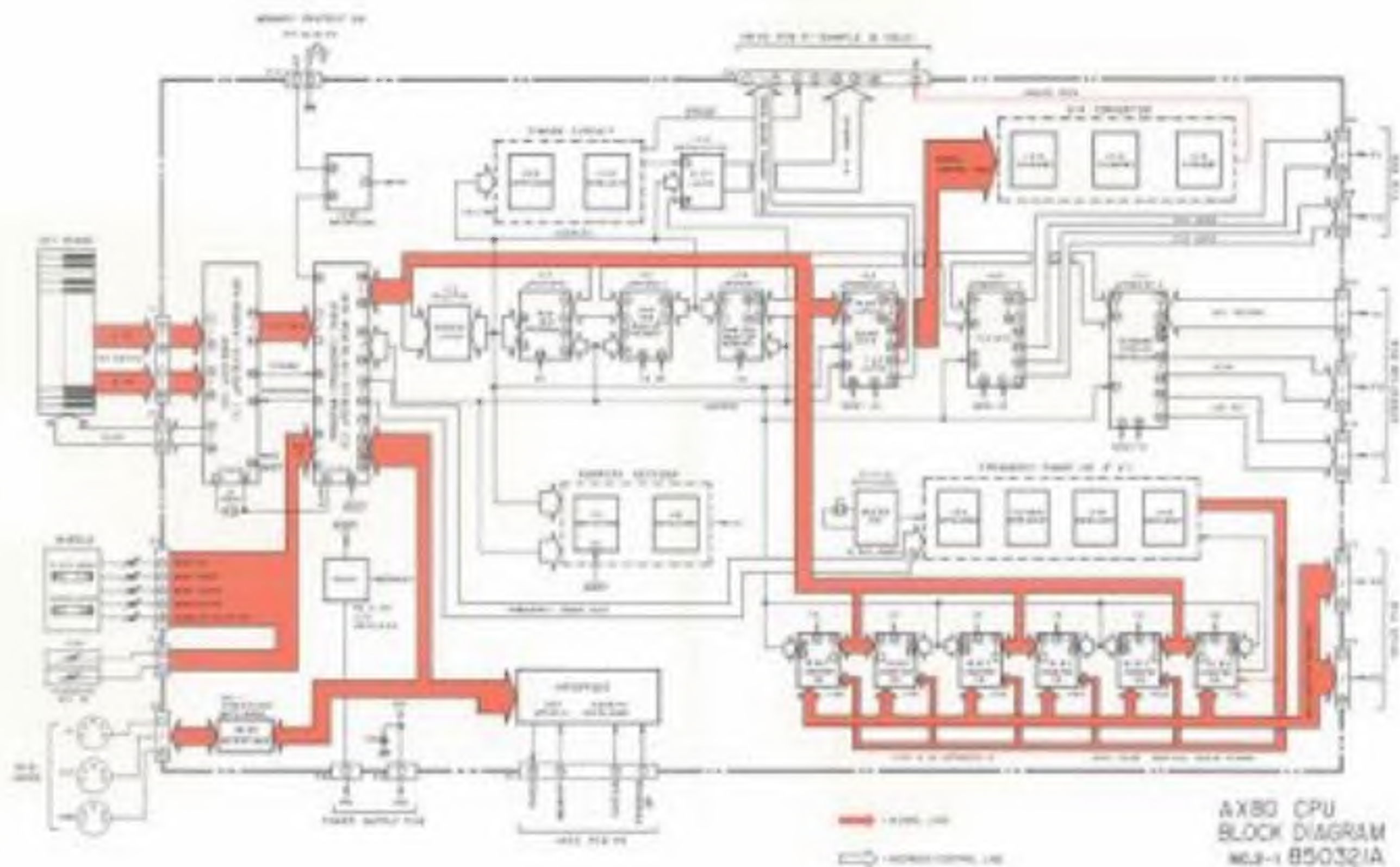
SCHEMATIC DIAGRAM AND PC BOARDS

TABLE OF CONTENTS

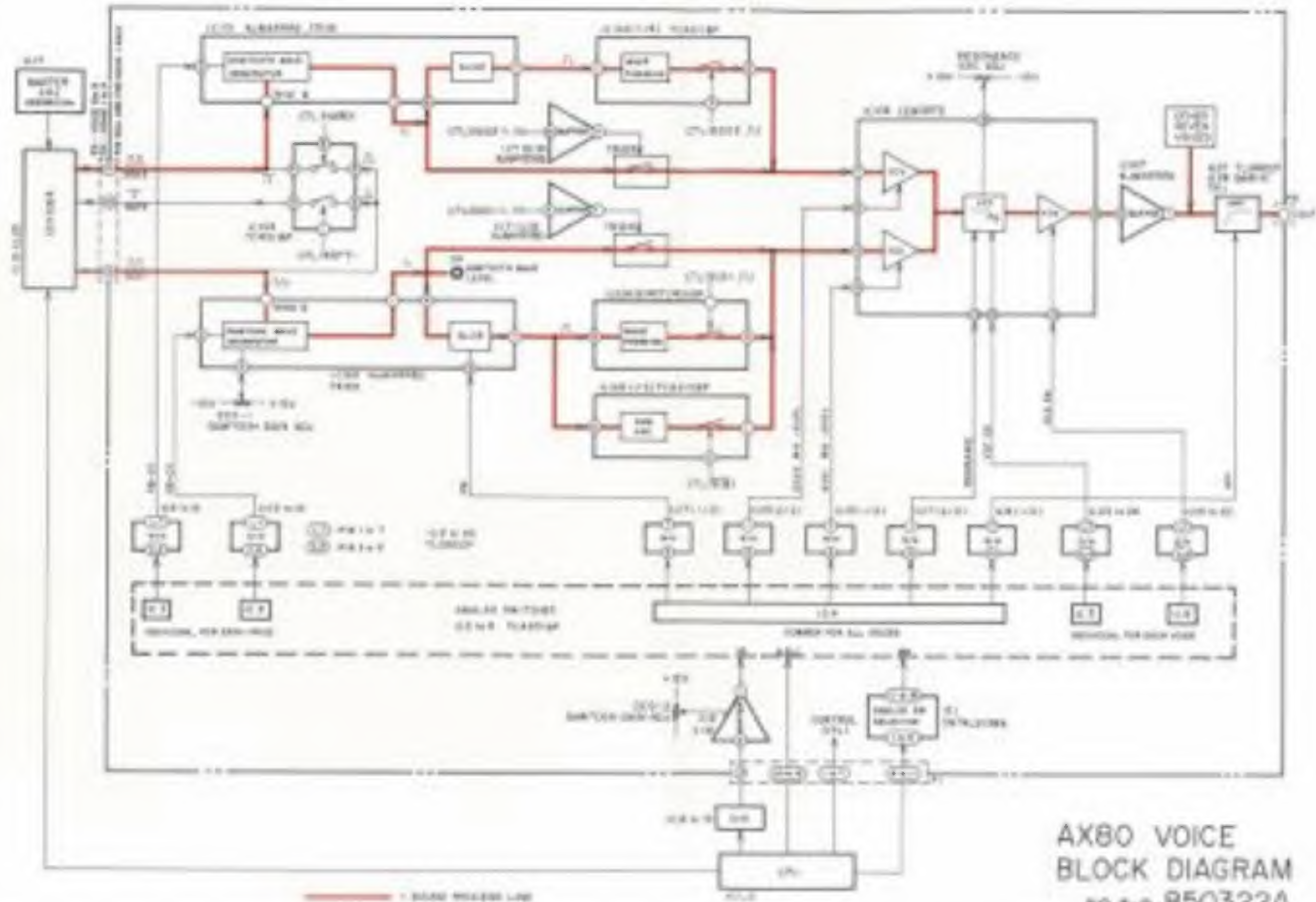
1. CPU BLOCK DIAGRAM	1
2. VOICE BLOCK DIAGRAM	3
3. CONNECTION DIAGRAM	4
4. OPERATION PC BOARD	5
5. POWER SUPPLY SCHEMATIC DIAGRAM	6
6. POWER SUPPLY PC BOARD	7
7. FLD (1) (2) SCHEMATIC DIAGRAM	8
8. FLD (1) (2) PC BOARD	9
9. OPERATION (1) SCHEMATIC DIAGRAM	10
10. OPERATION (1) PC BOARD	11
11. CPU SCHEMATIC DIAGRAM	12
12. CPU PC BOARD	13
13. VOICE SCHEMATIC DIAGRAM	14
14. VOICE PC BOARD	15

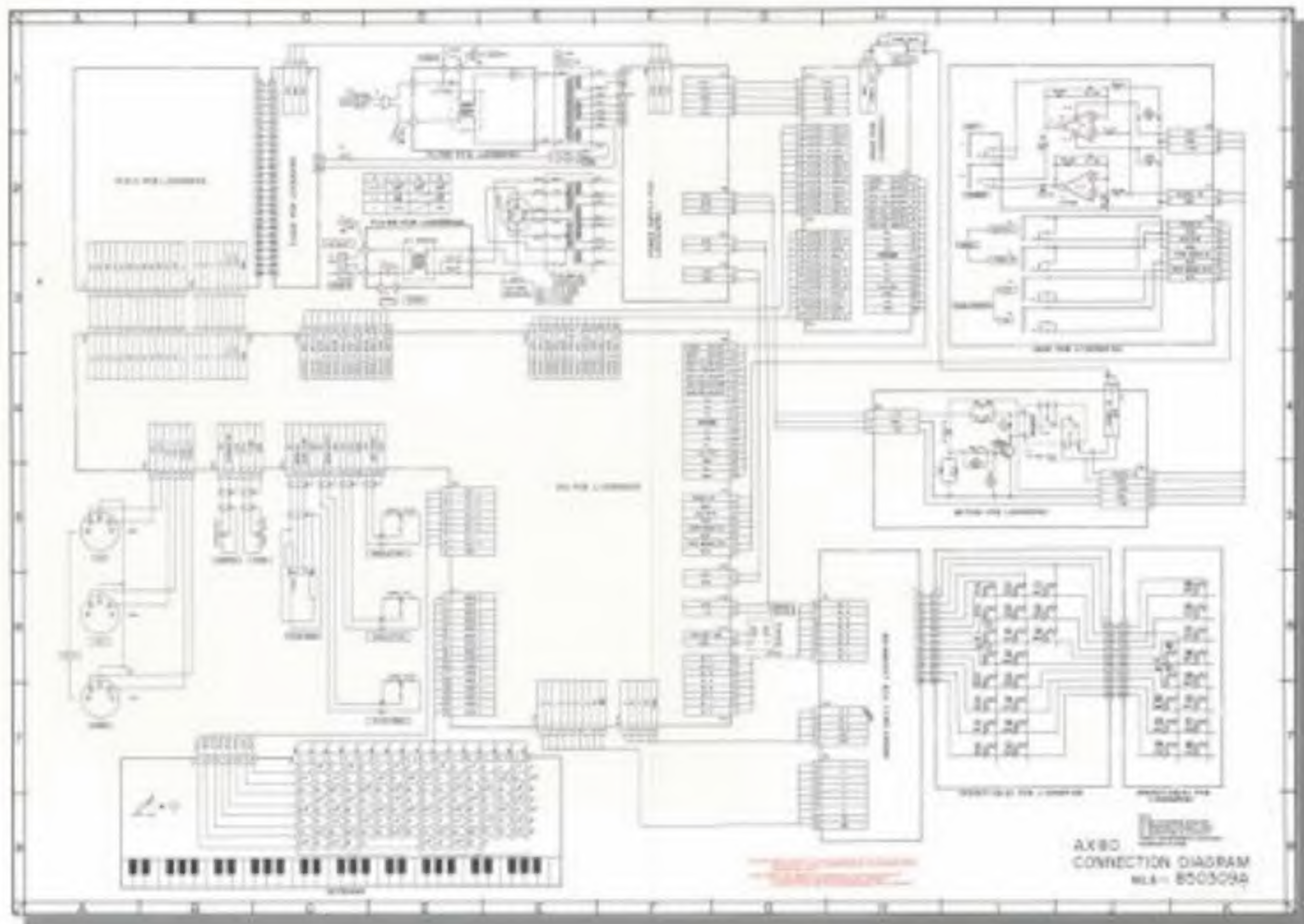
0u92

This Manual is FOR INTERNAL USE ONLY and must not be made available to unauthorized personnel. No part of this manual may be reproduced in any form without permission from AKAI ELECTRIC CO., LTD., Tokyo, Japan.

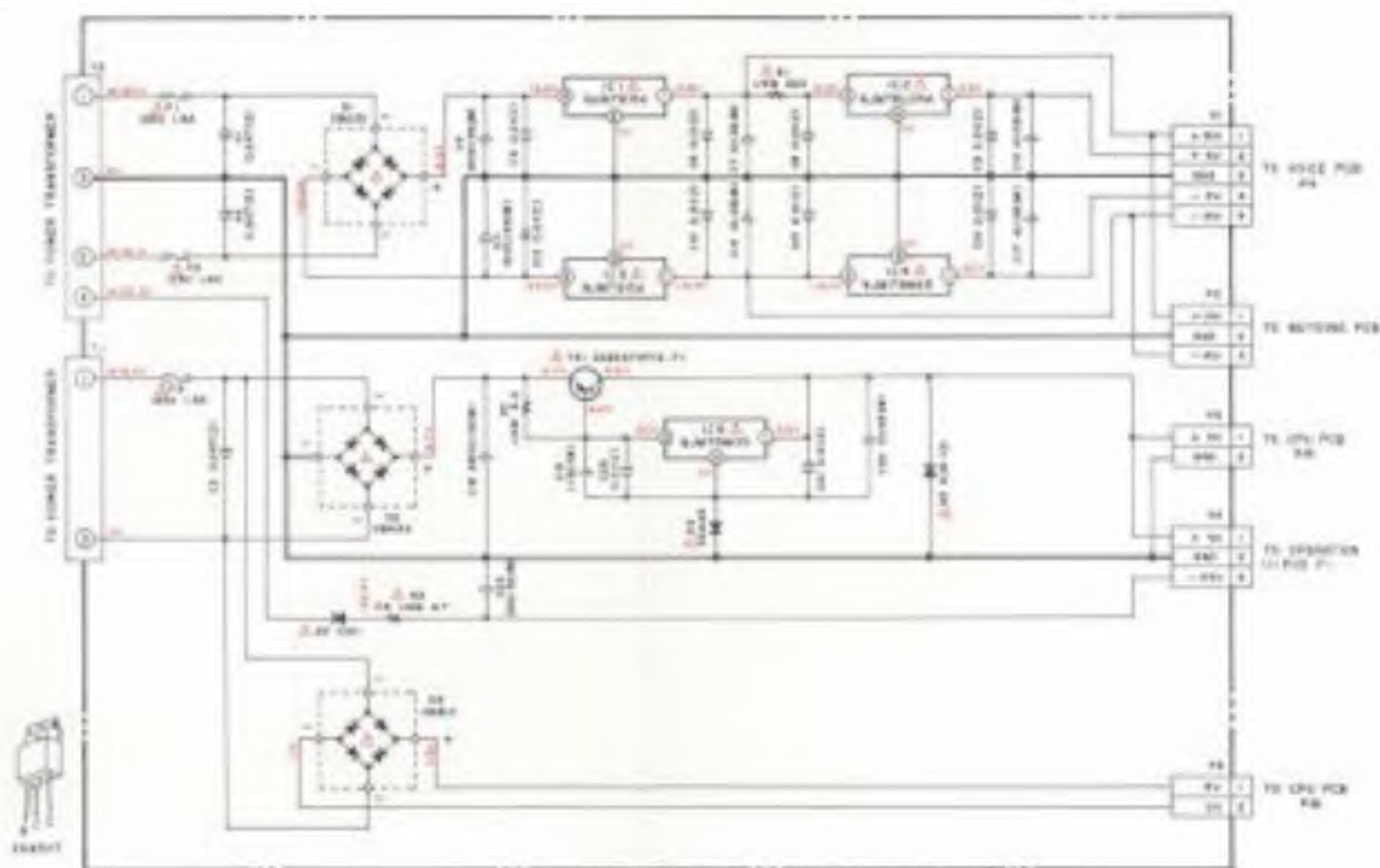


AX80 CPU
BLOCK DIAGRAM
MCS-1 B50321A





AX80



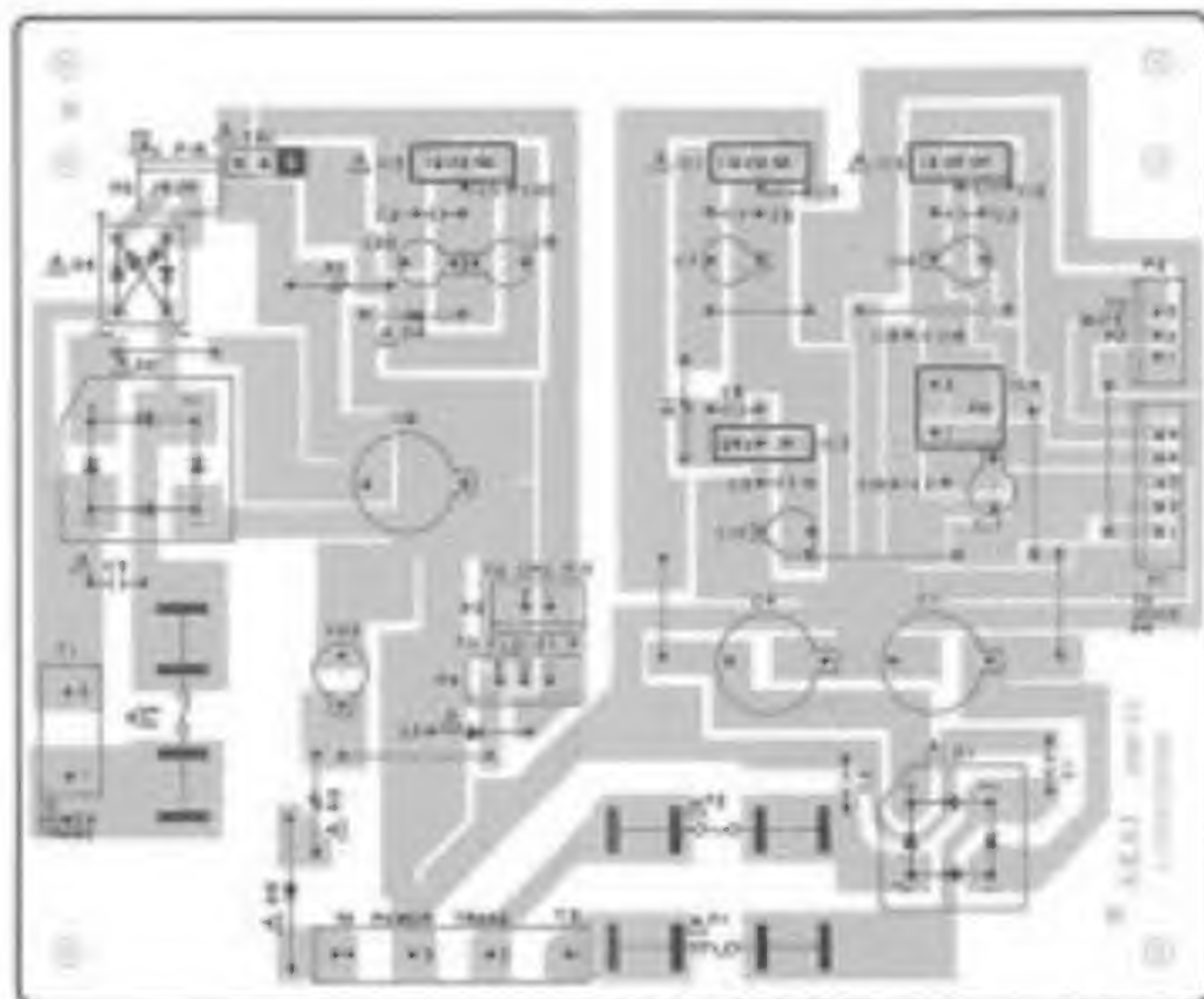
POWER SUPPLY PCB LI003C0090

NOTE:
UNLESS OTHERWISE SPECIFIED
ALL CAPACITORS ARE AT 50VDC

RESISTOR & CAPACITOR VALUES ARE IN OHMS UNLESS OTHERWISE SPECIFIED
RESISTOR & CAPACITOR VALUES ARE IN OHMS UNLESS OTHERWISE SPECIFIED
RESISTOR & CAPACITOR VALUES ARE IN OHMS UNLESS OTHERWISE SPECIFIED

RESISTOR & CAPACITOR VALUES ARE IN OHMS UNLESS OTHERWISE SPECIFIED
RESISTOR & CAPACITOR VALUES ARE IN OHMS UNLESS OTHERWISE SPECIFIED
RESISTOR & CAPACITOR VALUES ARE IN OHMS UNLESS OTHERWISE SPECIFIED

AX80
POWER SUPPLY
SCHEMATIC DIAGRAM
NO. 6-2 850310A

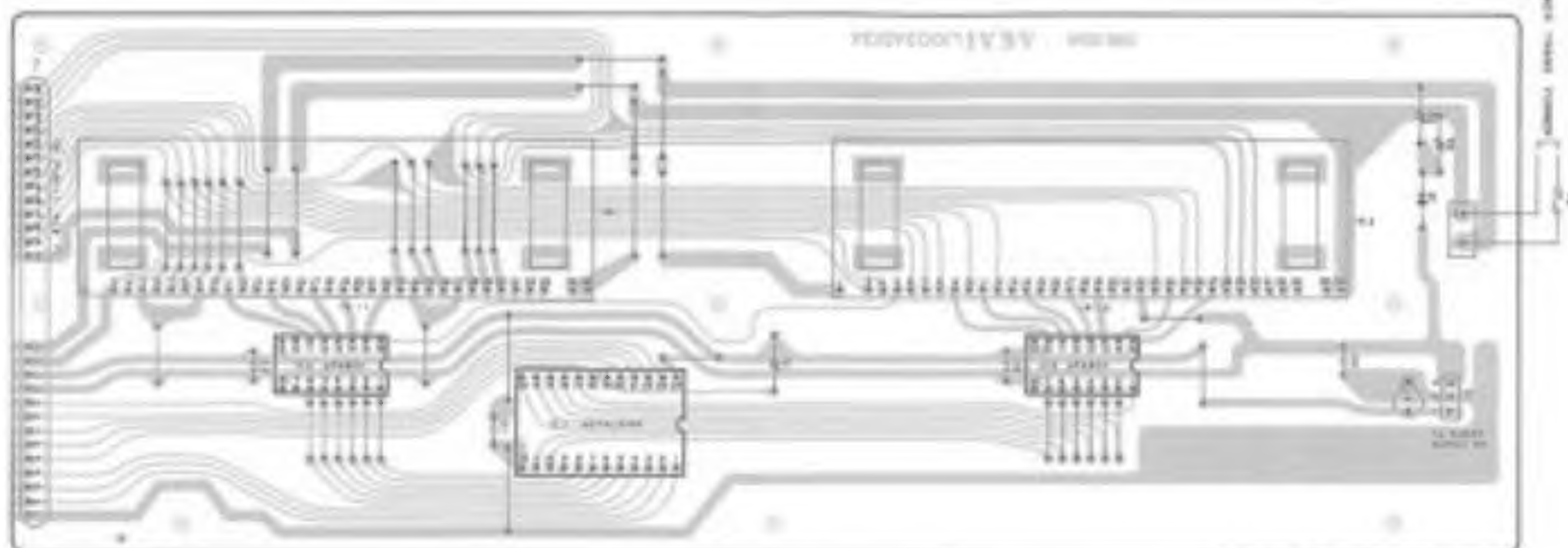


POWER SUPPLY PCB LI003C5090

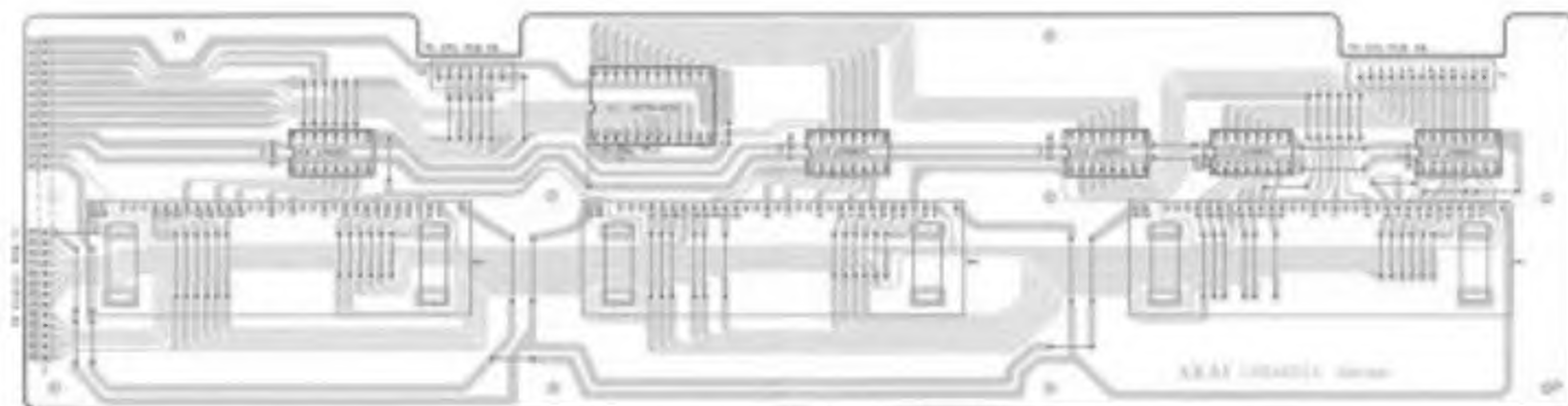
NOTES: 1. ALL COMPONENTS ARE TO BE MOUNTED ON THE BOTTOM OF THE BOARD.
2. ALL COMPONENTS ARE TO BE MOUNTED ON THE BOTTOM OF THE BOARD.
3. ALL COMPONENTS ARE TO BE MOUNTED ON THE BOTTOM OF THE BOARD.

PNP TRANSISTOR

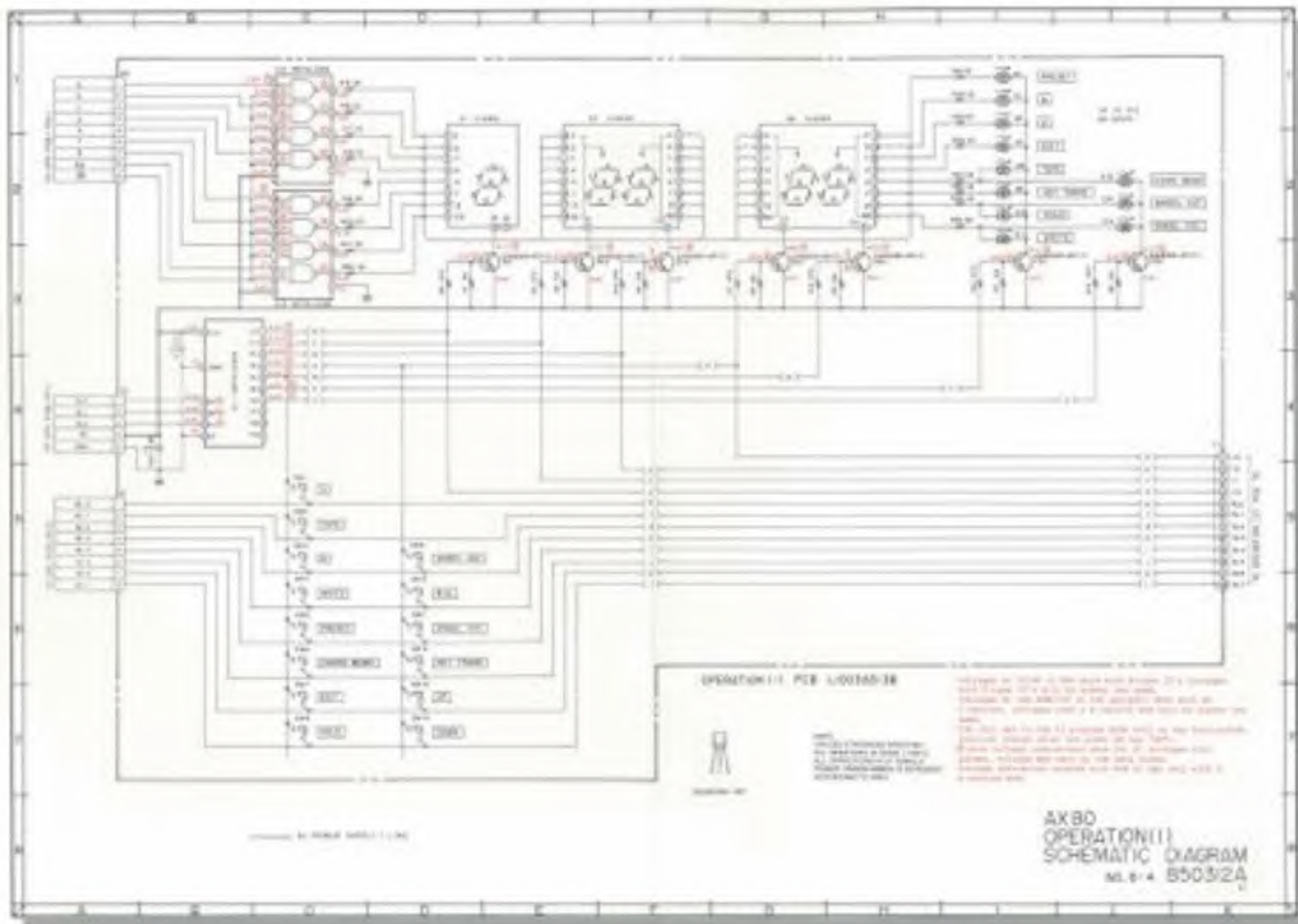


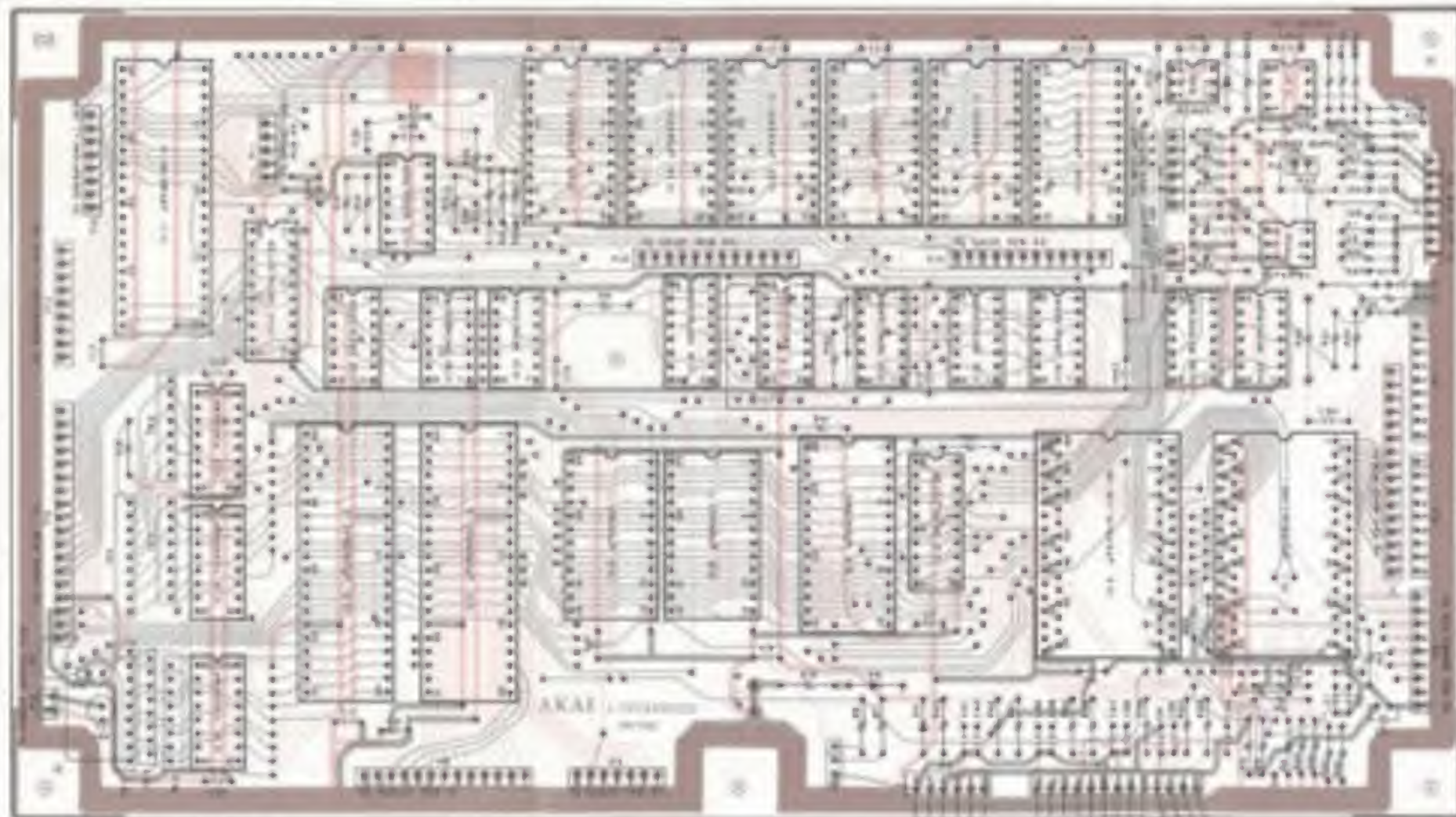


FLD K21 PCB L100345154



FLD K21 PCB L100345154





CPU PCB L100345000

LOCATION OF COMPONENTS

IC
 001.....40

002.....40

003.....40

004.....40

005.....40

006.....40

007.....40

008.....40

009.....40

010.....40

011.....40

012.....40

013.....40

014.....40

015.....40

016.....40

017.....40

018.....40

019.....40

020.....40

021.....40

022.....40

023.....40

024.....40

025.....40

026.....40

027.....40

028.....40

029.....40

030.....40

031.....40

032.....40

033.....40

034.....40

035.....40

036.....40

037.....40

038.....40

039.....40

040.....40

041.....40

042.....40

043.....40

044.....40

045.....40

046.....40

047.....40

048.....40

049.....40

050.....40

051.....40

052.....40

053.....40

054.....40

055.....40

056.....40

057.....40

058.....40

059.....40

060.....40

061.....40

062.....40

063.....40

064.....40

065.....40

066.....40

067.....40

068.....40

069.....40

070.....40

071.....40

072.....40

073.....40

074.....40

075.....40

076.....40

077.....40

078.....40

079.....40

080.....40

081.....40

082.....40

083.....40

084.....40

085.....40

086.....40

087.....40

088.....40

089.....40

090.....40

091.....40

092.....40

093.....40

094.....40

095.....40

096.....40

097.....40

098.....40

099.....40

100.....40

101.....40

102.....40

103.....40

104.....40

105.....40

106.....40

107.....40

108.....40

109.....40

110.....40

111.....40

112.....40

113.....40

114.....40

115.....40

116.....40

117.....40

118.....40

119.....40

120.....40

121.....40

122.....40

123.....40

124.....40

125.....40

126.....40

127.....40

128.....40

129.....40

130.....40

131.....40

132.....40

133.....40

134.....40

135.....40

136.....40

137.....40

138.....40

139.....40

140.....40

141.....40

142.....40

143.....40

144.....40

145.....40

146.....40

147.....40

148.....40

149.....40

150.....40

151.....40

152.....40

153.....40

154.....40

155.....40

156.....40

157.....40

158.....40

159.....40

160.....40

161.....40

162.....40

163.....40

164.....40

165.....40

166.....40

167.....40

168.....40

169.....40

170.....40

171.....40

172.....40

173.....40

174.....40

175.....40

176.....40

177.....40

178.....40

179.....40

180.....40

181.....40

182.....40

183.....40

184.....40

185.....40

186.....40

187.....40

188.....40

189.....40

190.....40

191.....40

192.....40

193.....40

194.....40

195.....40

196.....40

197.....40

198.....40

199.....40

200.....40

201.....40

202.....40

203.....40

204.....40

205.....40

206.....40

207.....40

208.....40

209.....40

210.....40

211.....40

212.....40

213.....40

214.....40

215.....40

216.....40

217.....40

218.....40

219.....40

220.....40

221.....40

222.....40

223.....40

224.....40

225.....40

226.....40

227.....40

228.....40

229.....40

230.....40

231.....40

232.....40

233.....40

234.....40

235.....40

236.....40

237.....40

238.....40

239.....40

240.....40

241.....40

242.....40

243.....40

244.....40

245.....40

246.....40

247.....40

248.....40

249.....40

250.....40

251.....40

252.....40

253.....40

254.....40

255.....40

256.....40

257.....40

258.....40

259.....40

260.....40

261.....40

262.....40

263.....40

264.....40

265.....40

266.....40

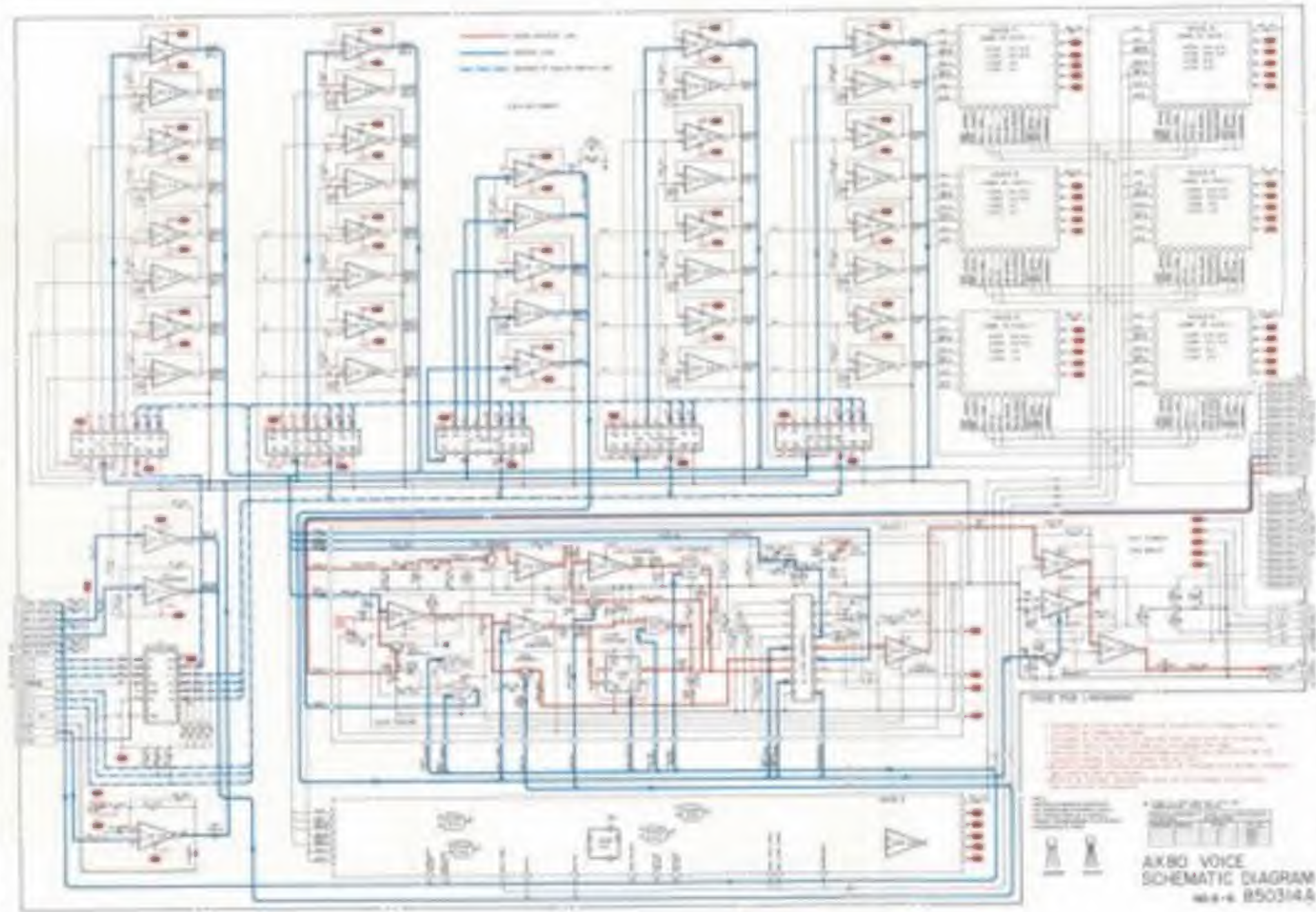
267.....40

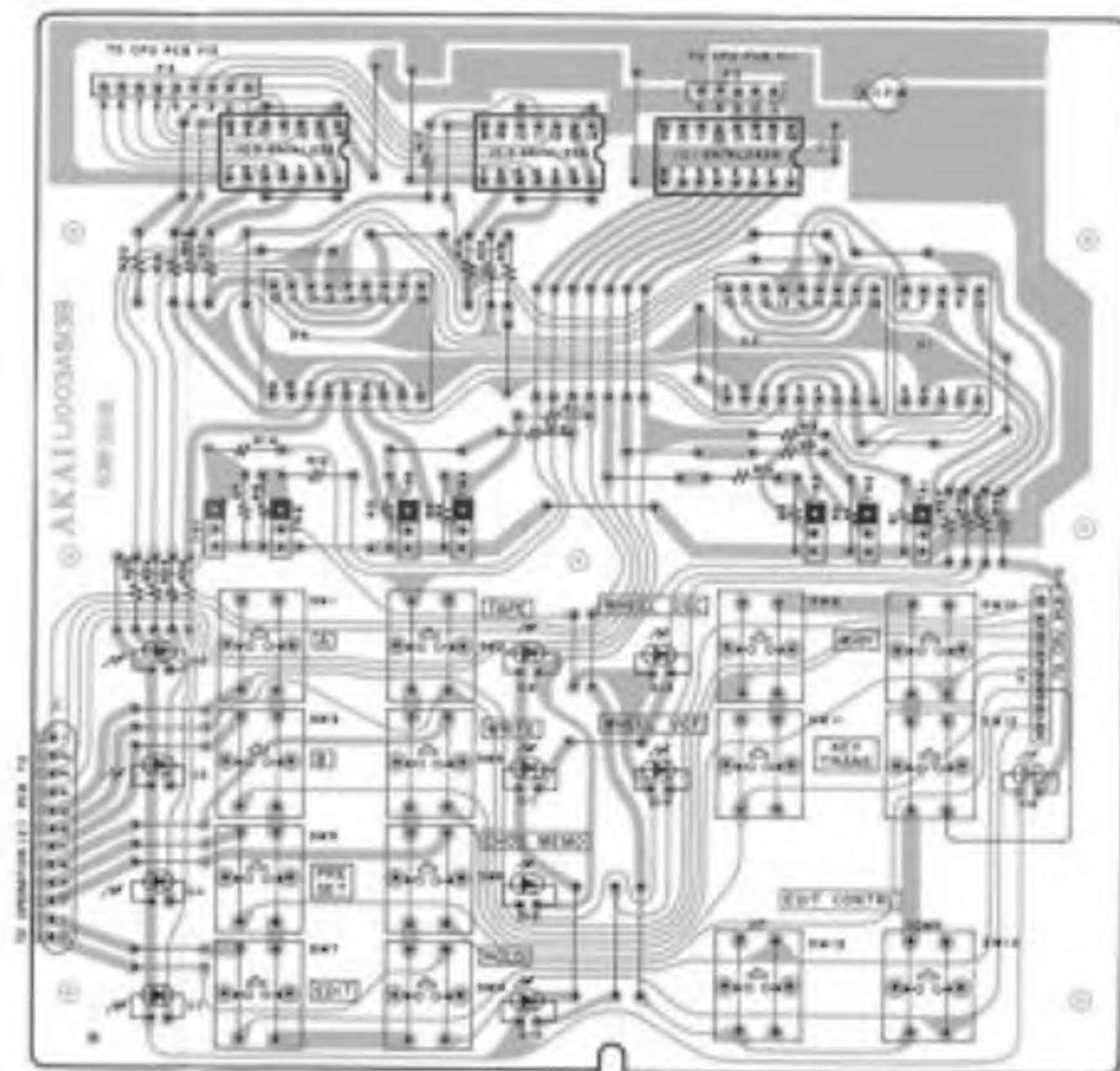
268.....40

269.....40

270.....40

27





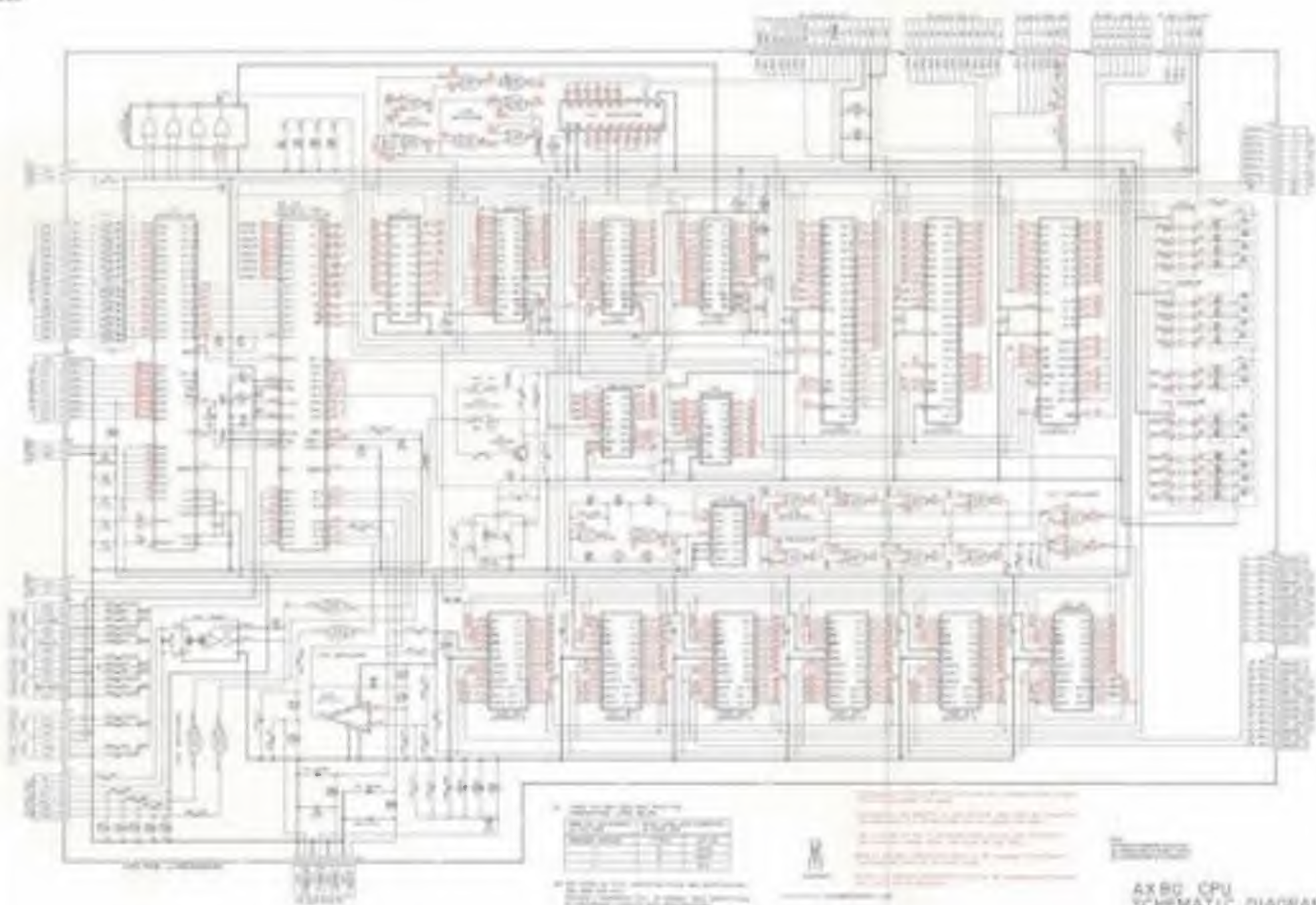
OPERATION (1) PCB LICO3A9138

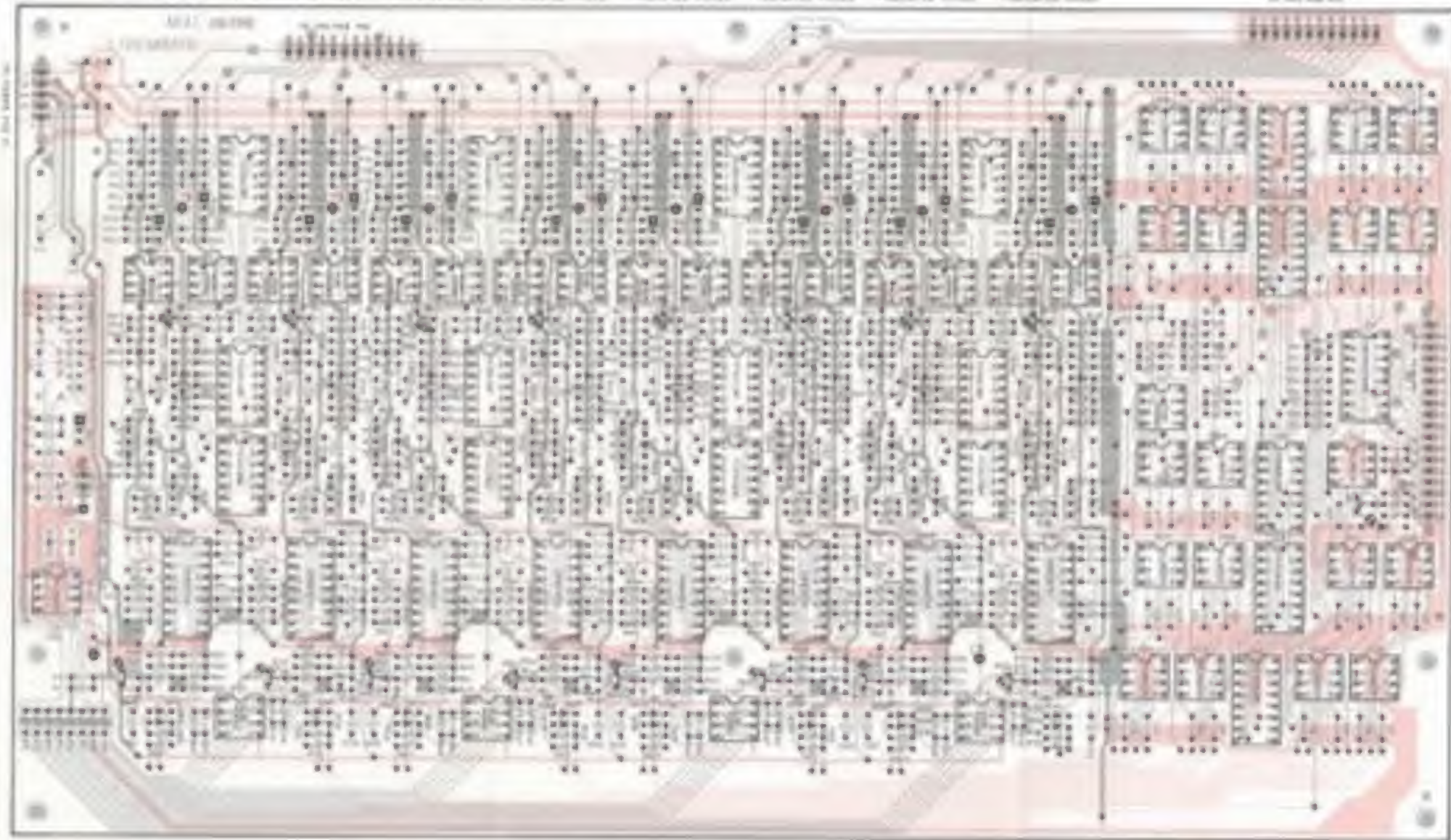


Tb: 6.7 Zränge: 40



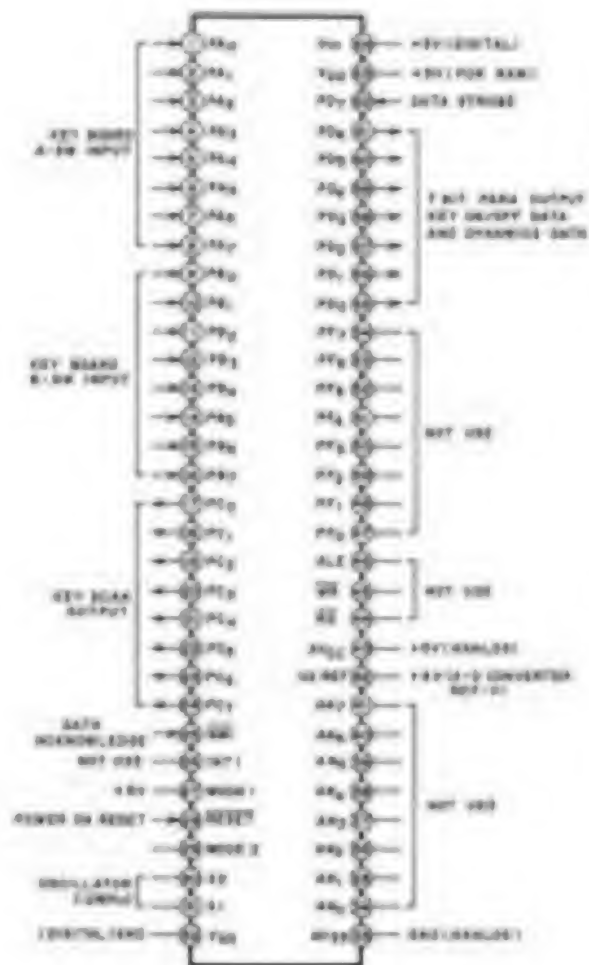
2944 • J. Neurosci., September 24, 2008 • 28(39):9938–9949



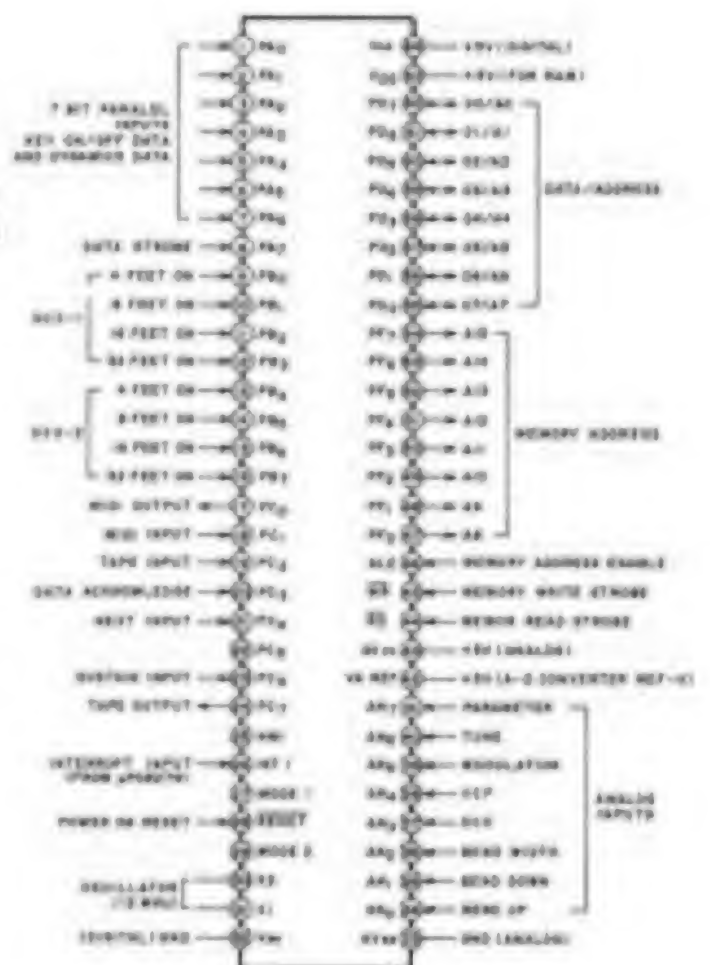


1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	980	981	982	983	984	985	986	987	988	989	990	991	992	993	994	995	996	997	998	999	1000	1001	1002	1003	1004	1005	1006	1007	1008	1009	1010	1011	1012	1013	1014	1015	1016	1017	1018	1019	1020	1021	1022	1023	1024	1025	1026	1027	1028	1029	1030	1031	1032	1033	1034	1035	1036	1037	1038	1039	1040	1041	1042	1043	1044	1045	1046	1047	1048	1049	1050	1051	1052	1053	1054	1055	1056	1057	1058	1059	1060	1061	1062	1063	1064	1065	1066	1067	1068	1069	1070	1071	1072	1073	1074	1075	1076	1077	1078	1079	1080	1081	1082	1083	1084	1085	1086	1087	1088	1089	1090	1091	1092	1093	1094	1095	1096	1097	1098	1099	1100	1101	1102	1103	1104	1105	1106	1107	1108	1109	1110	1111	1112	1113	1114	1115	1116	1117	1118	1119	1120	1121	1122	1123	1124	1125	1126	1127	1128	1129	1130	1131	1132	1133	1134	1135	1136	1137	1138	1139	1140	1141	1142	1143	1144	1145	1146	1147	1148	1149	1150	1151	1152	1153	1154	1155	1156	1157	1158	1159	1160	1161	1162	1163	1164	1165	1166	1167	1168	1169	1170	1171	1172	1173	1174	1175	1176	1177	1178	1179	1180	1181	1182	1183	1184	1185	1186	1187	1188	1189	1190	1191	1192	1193	1194	1195	1196	1197	1198	1199	1200	1201	1202	1203	1204	1205	1206	1207	1208	1209	1210	1211	1212	1213	1214	1215	1216	1217	1218	1219	1220	1221	1222	1223	1224	1225	1226	1227	1228	1229	1230	1231	1232	1233	1234	1235	1236	1237	1238	1239	1240	1241	1242	1243	1244	1245	1246	1247	1248	1249	1250	1251	1252	1253	1254	1255	1256	1257	1258	1259	1260	1261	1262	1263	1264	1265	1266	1267	1268	1269	1270	1271	1272	1273	1274	1275	1276	1277	1278	1279	1280	1281	1282	1283	1284	1285	1286	1287	1288	1289	1290	1291	1292	1293	1294	1295	1296	1297	1298	1299	1300	1301	1302	1303	1304	1305	1306	1307	1308	1309	1310	1311	1312	1313	1314	1315	1316	1317	1318	1319	1320	1321	1322	1323	1324	1325	1326	1327	1328	1329	1330	1331	1332	1333	1334	1335	1336	1337	1338	1339	1340	1341	1342	1343	1344	1345	1346	1347	1348	1349	1350	1351	1352	1353	1354	1355	1356	1357	1358	1359	1360	1361	1362	1363	1364	1365	1366	1367	1368	1369	1370	1371	1372	1373	1374	1375	1376	1377	1378	1379	1380	1381	1382	1383	1384	1385	1386	1387	1388	1389	1390	1391	1392	1393	1394	1395	1396	1397	1398	1399	1400	1401	1402	1403	1404	1405	1406	1407	1408	1409	1410	1411	1412	1413	1414	1415	1416	1417	1418	1419	1420	1421	1422	1423	1424	1425	1426	1427	1428	1429	1430	1431	1432	1433	1434	1435	1436	1437	1438	1439	1440	1441	1442	1443	1444	1445	1446	1447	1448	1449	1450	1451	1452	1453	1454	1455	1456	1457	1458	1459	1460	1461	1462	1463	1464	1465	1466	1467	1468	1469	1470	1471	1472	1473	1474	1475	1476	1477	1478	1479	1480	1481	1482	1483	1484	1485	1486	1487	1488	1489	1490	1491	1492	1493	1494	1495	1496	1497	1498	149
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	-----

μPD7811G-144 (CPU PCB-IC1)



μPD7811G-119 (CPU PCB-IC2)
μPD7811G-144



SECTION 4

SERVICE BULLETIN

- This section describes the information on techniques revisions and troubleshooting for servicing and adjusting AX80.
- To maintain the performance of AX80, see also AX80 Service Manual for servicing and adjustment.
- Further technical information will be issued as any arises.
Keep such information carefully under the name of this file.

0092

This Manual is FOR INTERNAL USE ONLY and must not be made available to unauthorized personnel. No part of this manual may be reproduced in any form without permission from AKAI-ELECTRIC CO., LTD., Tokyo, Japan.

MODEL: AX80

I N D E X

Bulletin No.	Subject No.	Description
AX80/1	001	Change of Voice Control IC
	002	IC TC4013BP name change

001 Subject: To improve performance

To improve sound quality, Voice Control IC (IC104 - 804 in Voice P.C. Board) CEM3372B has been changed to CEM3372C. The program of ROM IC (IC4 in CPU P.C. Board) uPD2764D-I has also been changed to uPD2764D-K.

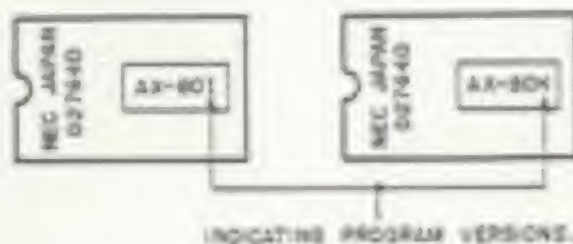
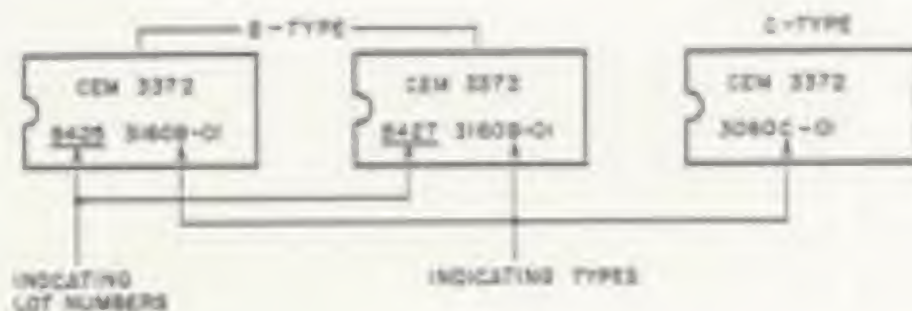
	IC104 - 804	Part No.	IC4	Part No.
Old	CEM3372B	EI-354184	uPD2764D-I	EI-354145
New	CEM3372C	EI-359630	uPD2764D-K	EI-359631

When one of Voice Control IC is changed from Old type to New type and vice versa, it is necessary to replace all Voice Control ICs and ROM IC at the same time.

Changed from : January 1985

Interchangeability : Not interchangeable

The following shows how to identify old and new ICs.



001 Subject: Parts Information

Change of Part Name.

Because of the new type IC TC4013BP production, the IC manufacture has changed the name of old type IC TC4013BP to TC4013BP. Old type IC TC4013BP and IC TC4013BP are interchangeable.

Since old type TC4013BP and new type TC4013BP function differently, IC itself can not be substituted. However, this change should not affect the operation of AX80 even when a new TC4013BP is installed.

The new type IC can be identified by its Lot Number. The letter 'B' will be added to its Lot Number.

Old type TC4013BP	8301H
New type TC4013BP	8322HB

The chart below shows the difference of their function.

OLD
TRUTH TABLE
TC4013BP

INPUTS				OUTPUTS	
CL	PR	D	CP Δ	Q $\Delta+1$	$\bar{Q}\Delta+1$
L	H	H	H	H	L
H	L	H	H	L	H
H	H	H	H	L	H
L	L	L	\int	L	H
L	L	H	\int	H	L
L	L	H	\bar{L}	Q Δ	$\bar{Q}\Delta$

H : Don't Care
 Δ : Level Change
 \int : No Change

NEW
TRUTH TABLE
TC4013BP

INPUTS				OUTPUTS	
CL	PR	D	CP Δ	Q $\Delta+1$	$\bar{Q}\Delta+1$
L	H	H	H	H	L
H	L	H	H	L	H
H	H	H	H	H	H
L	L	L	\int	L	H
L	L	H	\int	H	L
L	L	H	\bar{L}	Q Δ	$\bar{Q}\Delta$

H : Don't Care
 Δ : Level Change
 \int : No Change

MODEL: AX80

INDEX

Bulletin No.	Subject No.	Description
AX80/1	001	Change of Voice Control IC
	002	IC TC4013BP name change
AX80/2	003	For easier Voice P.C. B. adjustment
	004	Pitch bend, modulation VR change
	005	For easier Cut-off frequency adjustment
	006	Sub OSC oscillation countermeasure
	007	Qss A'tal costdown
	008	IC change information
	009	Parameter change in Edit mode countermeasure
AX80/3	010	Phone Amp Oscillation countermeasure
	011	Change of Voice Control IC and operation ROM IC.

MODEL: AX-80

No. AX-80/2 DATE: May 1985

809 Subject: Trouble countermeasure

To eliminate the problem of changing parameter in Edit mode by itself, especially on unit with IC uPD1811D-144 as IC2 on CPU P.C. Board, R4 on CPU P.C. Board has been changed from 150 to 82 PS.

Ref. No.	Prev.	New	Description
3-R4	150	82 PS 1/4W	82-322421

Changed from : February 1985
Service Ref. No. : SI-5046/X-106-85

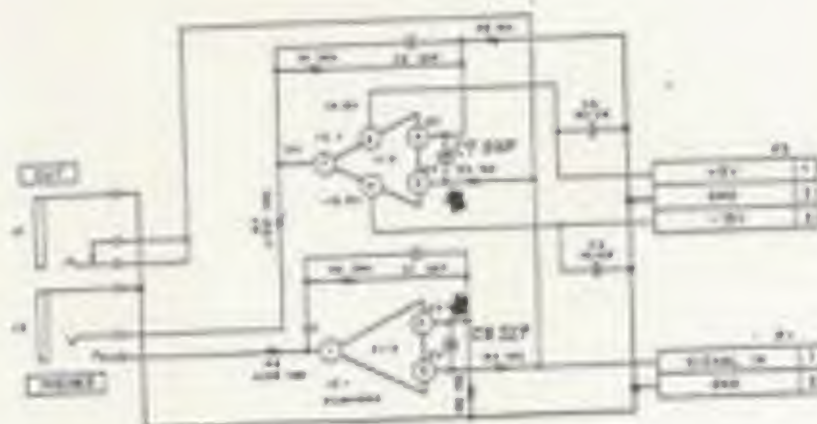
MODEL: AX80

No. AX80/3 DATE: August 1985

810 Subject: Trouble countermeasure

Symptom : Oscillation in Phone Amp in Jack P.C. Board.
Countermeasure : A capacitor has been added in Phone Amp.

Ref. No.	Description
3-C72, 81	C CE 220J 500C



Changed from : June 1985
Service Ref. No. : CHA0552

MODEL: AX80

NO. AX80/3

DATE: August 1983

011 Subject: Parts information

Because of the discontinuation of IC manufacture, IC CEM3372C in Voice P.C. Board has been changed to IC CEM3372D.

Accordingly, the program version of Operation ROM IC UPD2764D in CPU P.C. Board has also been changed from K version to L version.

	Ref. No.	Part No.	Description
(PREV.)	2-IC106B-8048	EI-359630	IC CEM3372C
(NEW)	2-IC106E-8042	EI-363530	IC CEM3372D
(PREV.)	2-IC4B	EI-359631	IC UPD2764D (K TYPE)
(NEW)	2-IC4E	EI-363531	IC UPD2764D (L TYPE)

NOTE : IC CEM3372D has to be paired with IC UPD2764D (L TYPE) for proper operation.

A/B Bank Board Data are interchangeable.

Changed from : July 1983

Service Ref. No. : CNL0053

MODEL: AX-80

INDEX

Bulletin No.	Subject No.	Description
AX-80/1	001	Change of Voice Control IC
	002	IC TC4013BP name change
AX-80/2	003	For easier Voice P.C. B. adjustment
	004	Pitch Bend, modulation VR change
	005	For easier Cut-off frequency adjustment
	006	Sub OSC oscillation countermeasure
	007	Osc X'tal costdown
	008	IC change information
	009	Parameter change in Edit mode countermeasure

001 Subject: To improve performance

To improve sound quality, Voice Control IC (IC106 - 806 in Voice P.C. Board) CEM3372B has been changed to CEM3372C. The program of ROM IC (IC4 in CPU P.C. Board) uPD2764D-I has also been changed to uPD2764D-K.

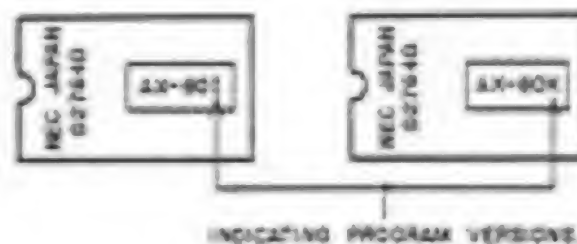
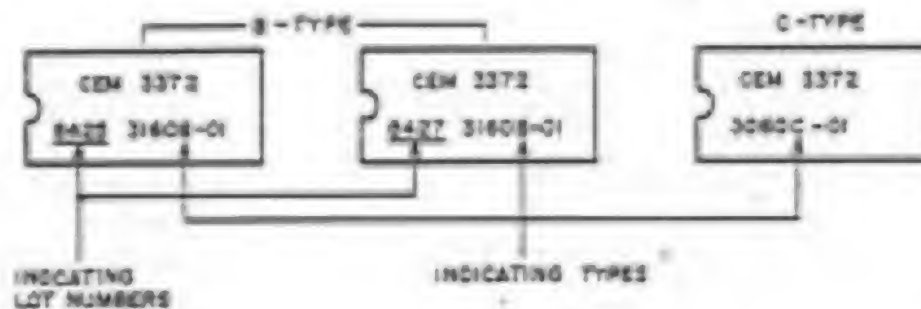
	IC106 - 806	Part No.	IC4	Part No.
Old	CEM3372B	EI-354184	uPD2764D-I	EI-354145
New	CEM3372C	EI-359630	uPD2764D-K	EI-359631

When one of Voice Control IC is changed from Old type to New type and vice versa, it is necessary to replace all Voice Control ICs and ROM IC at the same time.

Changed from : January 1985

Interchangeability : Not interchangeable

The following shows how to identify old and new ICs.



002 Subject: Parts information

Change of Part Name.

Because of the new type IC TC4013BP production, the IC manufacture has changed the name of old type IC TC4013BP to TC4013BAP. Old type IC TC4013BP and IC TC4013BAP are interchangeable.

Since old type TC4013BP and new type TC4013BP function differently, IC itself can not be substituted. However, this change should not affect the operation of AX-80 even when a new TC4013BP is installed.

The new type IC can be identified by its Lot Number. The letter 'B' will be added to its Lot Number.

Old type TC4013BP	8501M
New type TC4013BP	8522MB

The chart below shows the difference of their function.

OLD
TRUTH TABLE
TC4013BP

INPUTS				OUTPUTS	
CL	PR	D	CP Δ	Q _{n+1}	Q _{n+1} '
L	H	H	H	H	L
H	L	H	H	L	H
H	H	H	H	L	H
L	L	L	\int	L	H
L	L	H	\int	H	L
L	L	H	\sim	Q _n '	Q _n

H : Don't Care
 Δ : Level Change
 \int : No Change

NEW
TRUTH TABLE
TC4013BP

INPUTS				OUTPUTS	
CL	PR	D	CP Δ	Q _{n+1}	Q _{n+1} '
L	H	H	H	H	L
H	L	H	H	L	H
H	H	H	H	H	H
L	L	L	\int	L	H
L	L	H	\int	H	L
L	L	H	\sim	Q _n '	Q _n

H : Don't Care
 Δ : Level Change
 \int : No Change

003 Subject: To improve performance

For the ease of the adjustment on Voice P.C. Board, the following parts have been changed.

Ref. No.	Previous	New
2-R185-805	10K	100K CB.
2-R124-824	10K	100K CB.
2-R139-839	100K (F)	75K CB.
2-R144-844	10K (F)	10K CB.

Changed from : Nov. 1984

Service ref. no. : BB-5406X, BB-5621X

MODEL: AX-80

No. AX-80/2

DATE: May 1985

004 Subject: Parts information

The following parts have been changed for the standardization of parts,
VR905 PITCH BEND, VR906 MODULATION.

Ref. No.	Part No.	Description
13-VR905, 906	Prev. EV-354255	VR ROTARY 16L10XOV B103
	New EV-358043	VR ROTARY 16L10XGX B103

Changed from : Nov. 1984
Service ref. no. : SB-5579X

MODEL: AX-80

No. AX-80/2

DATE: May 1985

005 Subject: To improve performance

For the ease of Cut-off Frequency adjustment, R139-839 on Voice P.C. Board
have been changed from 750K to 680K.

Ref. No.	Previous	New
2-R139-839	750K	680K

Changed from : Dec. 1984
Service ref. no. : SB-5945X

MODEL: AX-80

No. AX-80/2

DATE: May 1985

006 Subject: Trouble countermeasure

To prevent the oscillation of Sub OSC, C110-810 on Voice P.C. Board have
been changed from 33pF to 56pF.

Ref. No.	Part No.	Description
2-C110-810	RC-250488	C CE V P05 CH 560J 500C

Changed from : Jan. 1985
Service ref. no. : SB-6124X

MODEL: AX-80

No. AX-80/2

DATE: May 1985

DS7 Subject: Parts information

The Oscillation X'tal X2 on CPU P.C. Board has been changed for the costdown purpose.

Ref. No.	Part No.	Description
3-X2	Prev. EI-354168	OSC X'TAL HC-18 6.5548MHz
	EI-358944	OSC X'TAL NH-18 6.5548MHz
	New EI-358966	OSC X'TAL NH-18 6.5516MHz

Changed from : Feb. 1985

Service ref. no. : BB-58951, BB-59911

MODEL: AX-80

No. AX-80/2

DATE: May 1985

DS8 Subject: Parts information

IC NJM4558D used on Voice P.C. Board has been changed to IC TL4558P, for the standardization of parts.

Ref. No.	Part No.	Description
2-IC7	Prev. EI-211390	IC NJM4558D
2-IC101-801		
2-IC102-802	New EI-338502	IC TL4558P
2-IC107		
2-IC307		
2-IC307		
2-IC707		

IC Socket for IC TL4558P has been added for IC-101-801

Ref. No.	Part No.	Description
2-S13-20	EJ-359147	Socket IC DIL8 8P-6J

Changed from : Feb. 1985

Interchangeability : IC NJM4558D and IC TL4558P should not be used combined, since it might cause the imbalance of the output between Voices.

Service ref. no. : BB-6354X, BB-6207X

009 Subject: Trouble countermeasure

To eliminate the problem of changing parameter in Edit mode by itself, especially on unit with IC uPD7811G-144 as IC2 on CPU P.C. Board, R4 on CPU P.C. Board has been changed from 150 to 82 FS.

Ref. No.	Prev.	New	Description
3-24	150	82 FS 1/4W	ER-122421

Changed from : February 1985

Service Ref. No. : SX-5046/K-706-85

AKAI ELECTRIC CO., LTD.

12-14, 2-Chome, Higashi-Kojima, Ohta-Ku, Tokyo, Japan
TEL: Tokyo (742) 5111 CABLE: HIFAKAI TOKYO TELEX: J26261
Formel No. 880422 G1-1000 Printed Date: JUN 18, 1985
Printed in Japan